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NATIONAL PLANT MATERIALS CENTER

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Beltsville, Maryland

SOIL CONSERVATION SERVICE
NATIONAL PLANT MATERIALS CENTER
AGRICULTURAL RESEARCH CENTER
Beltsville, Maryland

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Richard C. Russell.....Nursery Worker

Helen M. Chamberlin.....Clerk-Stenographer

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Gratitude is expressed to Mrs. Chamberlin and Mr. Everett for the assembly and compilation of this two-year report.

United States Department of Agriculture
Soil Conservation Service
National Plant Materials Center
Beltsville, Maryland

ANNUAL REPORTS
1965 & 1966

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United States Department of Agriculture
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INTRODUCTION

This report covers the operations of the National Plant Materials Center at Beltsville, Maryland for the calendar years 1965 and 1966. Some of the major functions are to facilitate the exchange of conservation plant materials with other countries, locate and arrange for importation of specific items or collections, provide the initial increase from collectors' packets, arrange for verification of identity by USDA botanists or by others at the Smithsonian Institution, and to provide specific inoculants for little known species of legumes.

Seed or other propagules are provided to the other climatically located plant materials centers throughout the United States, with background information such as origin, soils preference, geographic distribution, chromosome numbers, germination habits, drought tolerance, habit of growth and related items.

For those who are not entirely familiar with the Plant Materials Operations of the Soil Conservation Service, a paragraph briefly outlining these may be useful in visualizing the picture:

Following assembly, plants are grouped either by genera or use-groups for comparison purposes. A species or strain now in use is used as a standard. When a superior plant or accession appears, it is isolated, further increased and tested on specific problem sites where its final performance is determined. To make the initial comparisons, there are plant materials centers established in the major soil-climatic regions of the U.S.A. Actual locations are: Big Flats, New York; Beltsville, Maryland; Cape May Court House, New Jersey; Quicksand, Kentucky; Americus, Georgia; Coffeeville, Mississippi; Arcadia, Florida; Mayaguez, Puerto Rico (an extension of Arcadia PMC); Rose Lake, Michigan; Elsberry, Missouri; Manhattan, Kansas; Knox City, Texas; Bismarck, North Dakota; Bridger, Montana; Los Lunas, New Mexico; Tucson, Arizona; Pleasanton, California; Corvallis, Oregon; Pullman, Washington; Aberdeen, Idaho; and Wailuku, Hawaii.

With all of these areas calling for plant materials over and above native collections, it is readily apparent why the National Plant Materials Center alone has registered nearly 18,000 accessions. Included in the material are grasses, legumes, browse plants, shrubs, trees, and groundcovers.

Accurate records of accessions and dispersal are maintained so the history of any item can be reconstructed, together with performance records on all items grown.

Operations at the National Plant Materials Center are carried out on lands assigned by the Agricultural Research Center Operations Division. This area lies at the junction of the Coastal Plain and Piedmont Regions of Maryland. The soils are characterized by those common to both these regions, changing quickly from heavy plastic clays to deep droughty sands. Although rainfall is normally in excess of 40 inches per year with equal monthly distribution during the growing season, 1965 and 1966 were again years of decidedly less than normal rainfall.

COLLECTION AND ASSEMBLY OF PROMISING PLANT MATERIALS

Some of the SCS employees who go abroad help secure new plant materials. S. H. Fuchs, on his trip to Tunisia in 1964, sent a few which are now under test at the New Mexico Plant Materials Center.

FAO in Rome helped secure a number of European named varieties of standard grasses and legumes.

A PL-480 Project in Brazil sent a comprehensive collection of native forage and range grasses. It included Andropogon, Axonopus, Bothriochloa, Chloris, Eragrostis, Panicum, Paspalum, Setaria, and a few other miscellaneous genera.

Quite a wide range of legumes and grasses was secured from botanic gardens, the heaviest contributors being Pruhonice, Czechoslovakia, and Tashkent, Russia.

Dr. A. J. Oakes' expedition to South Africa in 1964 added many Chloris, Cenchrus, and Digitaria.

Several hundred accessions were received from the 1965 collection of Agricultural Explorers Quentin Jones and Wesley Keller in the Union of Soviet Socialist Republics.

The Regional Plant Introduction Stations of Agricultural Research Service were again heavy contributors.

OTHER PROJECTS

Started in the fall of 1964 was an assembly of varieties of grasses and legumes which have been developed at SCS plant materials centers, or whose use has been expanded by extensive conservation plantings. These are mostly named varieties already released or approaching commercial production. The garden in which this material is planted will be a memorial to Dr. Franklin J. Crider,

one of the original SCS workers in this endeavor. It will contain over 160 selections and will bring together in one spot a wide selection of conservation plants where SCS employees, foreign visitors, and other conservation-oriented groups can study them.

In addition to those varieties already proven, reports are received that a number of other accessions appear very promising. The Arcadia, Florida, plant materials center has picked out a Brachiaria ruziziensis, PI-247404, as a high-producing rhizomatous perennial with strong seedling vigor.

Digitaria pentzii, PI-196352, and Digitaria valida PI-196342, are producing forage comparable to pangola, as well as viable seed.

One Cenchrus ciliaris sent to Hawaii is producing at least twice the growth, with the same management, as the standard variety.

A perennial peanut may add materially to Florida pastures.

Some of the new lovegrasses appear more palatable than the old standard.

One sainfoin, Onobrychis viciifolia, is about ready for extended trials.

Heavy producing birdfoods are being found in introductions of Setaria and Panicum.

The streambank erosion control program may be eased by the use of a Salix interior selection received from the Netherlands, and the picture looks promising for the development of a dwarf reed canarygrass for waterways and similar sites. Certified 'Tufcote' bermudagrass is to be produced in Mississippi.

A new product, the residue of cocoa bean extraction is being used for mulch as well as a soil amendment. Glasshouse pot experiments were conducted during the winter months on seedling emergence and establishment with this cocoa mulch. A short paper on the findings may be released.

A summarization of five years' readings on a bank planting was presented at the Annual Meeting of the American Society of Agronomy at Columbus, Ohio, in 1965.

Two short television programs outlining the work of the National Plant Materials Center resulted in many requests for information on the SCS-developed strain of 'Cardinal' autumn olive.

A total of 2,095 new accessions were received during the two-year period, sixty-one foreign countries making contribution. In 1965, 426 packets were sent to 36 countries, and in 1966, 624 items were sent to 32 countries. A total of approximately 4,500 packets of seed went to SCS plant materials centers in 1965 and 1966, while

additional material was distributed as cuttings, sod and other vegetative propagules. We furnished 1,126 packets during the same period in response to requests from other agencies, state experiment stations, etc., within the United States.

A continued flow of new plant materials is expected, since arrangements have been made to include needed conservation plant materials in proposed explorations by ARS personnel.

PERSONNEL

Lost to the Service was Phil Hager, who returned to ranching. Lost to the National Plant Materials Center were both Mr. Hager and Arnold Davis. Arnold is now Plant Materials Center Manager at Knox City, Texas. Returning from his western tour, Cliff Williams, a former NPMC technician,is now plant materials center manager at Big Flats, New York. As of February 1965 we acquired an Agronomy graduate of the University of Maryland, Wayne Everett, who is taking over the field work. Our latest addition, in June of 1966, is Dr. Tom V. Williams, who will devote most of his time to a cooperative effort by the Soil Conservation Service, the Maryland State Roads Commission and the Bureau of Public Roads on revegetation of highway roadbanks.

NOTES & COMMENT

GRASSES

Agropyron caninum (L.) Beauv. - PI-297868

Found in open woods, north and central Europe, occasionally in Spain, Italy and the Caucasus. Is a perennial sod former with slow creeping rhizomes. Stems erect or geniculate at base. Not very aggressive but did spread to 12 inches in two years, with moderately abundant basal leaves. Uniformity of ripening good, with little shattering.

Agropyron cristatum (L.) Gaertn. - PI-297869-870

Fairway wheatgrass.

Both introductions showed early, abundant spring recovery and both had a variable population. There seemed to be little difference between either bloom date or date of maturity. Started to make sod at the end of the second year.

Agropyron desertorum (Fisch.) Schult. - PI-283162

Crested wheatgrass.

This cool hardy, tufted perennial evidenced late abundant spring recovery and early fall recovery. It produced a large amount of forage and a good seed crop. It was fully 4 inches taller than the A. cristatums. Original seed went to the New Mexico PMC; BN-reproduced seed was shipped to Montana, Idaho, and Arizona.

Agropyron elongatum (Host.) Beauv. - PI-283163-164; PI-297871

Tall wheatgrass.

Of the three accessions, PI-283163 has the best forage value. However, 283164 produced a better seed crop. Partial distribution of both has been made to the Missouri, Washington, Kansas, Arizona, New Mexico, California, Oregon and Idaho PMC's. PI-297871 had good spring recovery; was variable. Badly diseased in our climate.

Agropyron intermedium (Host.) Beauv. - PI-297872

Intermediate wheatgrass.

This accession showed moderate winter loss with early, sparse recovery, both spring and fall. We rated it a poor accession here - are having the identification verified.

Agropyron junceum (L.) P.Beauv. - PI-292580-581; 297873

Wheatgrass.

Of the three accessions, the two from Israel (PI-292580-581) spread rather slowly whereas PI-297873 from Portugal was a vigorous, rapid spreader, completely filling the space between rows in the second year. This cool semi-hardy perennial is a pioneer of coastal and desert sand dunes in southern Europe, north Africa and western Asia, and is under extensive trials in Israel. It doesn't make a tight sod. Note that the accession from Portugal matured seed by mid-July, whereas the two from Israel did not do so until late September.

GRASSES

Agropyron obtusiusculum Lange. - PI-283166
Wheatgrass.

A native of sandy places in northern Europe. This cool hardy perennial is slowly rhizomatous but produces only a fair amount of forage and seed. Original seed went to Idaho.

Agropyron pectiniforme Roem. & Schult. - PI-297874
Wheatgrass.

A species similar to A. cristatum, but having 7-10 fls. per spikelet. A tufted perennial grass found on heavy soils in the native pastures of Europe, Russia and the cooler high altitudes of Asia Minor. Both fall and spring recovery for this accession was sparse, as was the amount of heading. Quite a heavy dose of Helminthesporum leaf spot. Would probably perform better in more northern latitude with heavier soils than we employed.

Agropyron rigidum Beauv. - PI-283169

We received this introduction from Germany via Australia. Should interest in this accession develop, a herbarium should be submitted, as it appears to be an intermedium-elongatum complex type. It is a hardy perennial but did not show very good forage potential here. Original seed was sent to the Missouri PMC.

Agropyron scabrifolium (Doell) Parodi - PI-297875
Syn. A. repens v. scabrifolium

This is a cool hardy perennial forming open sod from short rhizomes. Both spring and fall recovery was abundant. Leaf disease was heavy in mid-summer. Many volunteer seedlings.

Agropyron trichophorum (Link) Richt. - PI-297876
Pubescent wheatgrass.

We had nearly 50% loss of this cool season perennial bunchgrass during the first winter. Spring and fall recovery sparse. Good uniformity of ripening in mid-July.

Agrostis alba L. - PI-283171-172
Redtop.

PI-283171 suffered some winter damage and was late in spring recovery but good in fall recovery the following summer. PI-283172 had no winter damage and has spread quite well. Original seed of each went to New York, and BN-reproduced seed of each was sent to Michigan, Missouri, Montana and Idaho.

Agrostis eriantha Hack. - PI-299460

This native of South Africa was collected on Mt. Anderson (about 7,000') in the Transvaal. Is found on open grasslands and rocky soils. A cool hardy perennial here and did not set seed until the second year. Rhizomatous.

GRASSES

Agrostis tenuis Sibth. - PI-297330
Colonial bentgrass.
Apparently not happy here since it only spread to 10 inches in two years. Late blooming, with questionable fill. We are too far south for good performance.

Agrostis sp. - PI-289644
This cool hardy perennial from Spain is slowly rhizomatous, but produces a small amount of forage before sending up an abundance of seed heads. It was also subject to storm damage by lodging. BN-reproduced seed went to New York, Michigan, Oregon and Missouri centers. Herbarium has been submitted for identification, but came back still A. sp.

Alopecurus arundinaceus Poir. - PI-297331
Creeping foxtail.
This one had better hurry and start spreading, or we will have the name changed to A. pratensis.

Alopecurus pratensis L. - PI-289646
Meadow foxtail.
A rhizomatous perennial, better called arundinaceus, from Spain. Has few leaves, is a poor seed producer, and goes dormant in summer. No distribution. Compare it with 'Garrison' for sod production.

Alopecurus pratensis L. - BN-14761
Meadow foxtail.
Seedlings of a cross of BN-11188 and BN-11198 out of Poland. Good emergence with medium strong seedlings. As expected, the population is variable, but still retains fairly uniform ripening with good seed production.

Andropogon condensatus H.B.K. - PI-312904
Received as vegetative material and identified as Andropogon cf. microstachyus Desf. This is A. condensatus H.B.K. according to "Manual of the Grasses of the West Indies", USDA Misc. Publication No. 243. This introduction is a robust tufted erect glabrous perennial, 1-1.5 meters tall; culm repeatedly branching toward the summit, forming a large corymbrose compound inflorescence; blades 10-20 cm. long, 5-10 cm. wide, usually stiffly spreading. Occurs in open, rather dry ground, eastern Mexico and southern West Indies to Argentina. Foliage appears palatable. Our accession was received from Colombia, South America.

Andropogon distachyus L. - PI-283179-180
Both PI's produced abundant forage but little seed. Both winter-killed, and were subject to leaf spot. Needs Mediterranean climate. Georgia received original seed of both accessions; California original seed of 283180.

GRASSES

Andropogon gayanus Kunth - PI-299027
Gamba grass.

This tall, tufted, tender perennial received as vegetative material produced abundant forage during the summer months and was five feet tall by September 15. The one plant we had bloomed twice in the glasshouse but refused to set any seed. No distribution as the accession is cross-pollinated.

Anthoxanthum odoratum L. - PI-306726-727
Sweet vernalgrass.

Just another sweet vernal sent in here vegetatively. Might better have remained in Greece.

Brachypodium phoenicoides (L.) Roem. & Schult. - PI-283194
False brome.

This cool hardy rhizomatous perennial produced an abundance for forage in spring and fall for sheep. A good crop of seed was also produced. Found in dry grasslands, roots deeply penetrating. Part of the original seed went to California.

Bromus danthoniae Trin. - PI-297886

No better than any other previous danthoniae; died in the field without heading. No distribution.

Bromus erectus Huds. - PI-251806, 289655, 292849
Tall brome; meadow brome.

PI-289655 came from Spain as Festuca sp. It had abundant spring and fall recovery; is a good seed producer - $5\frac{1}{2}$ ounces from a 20-ft row. Leaf spot on some plants of the other two accessions. PI-292849 had excessive shattering. Bloom and maturity dates were the same for all three. PI-251806 was so variable that we moved 9 plants out of the original planting; we will see if we can find out what the species really is. This accession also had bad ergot in 1965. PI-289655 went to the Washington PMC as Festuca sp.

Bromus inermis Leyss. - PI-292850
Smooth brome.

This smooth brome out of Germany was strongly rhizomatous. Seedlings were strong but did show a little leaf spot and some variation in time of heading.

Bromus ramosus Huds. - PI-240152

This slow developing cool hardy perennial appears to have good drought resistance with early abundant spring recovery. This year's drought slowed it down somewhat. Most of the good forage is found at the base, even though there are a few leaves to 15 inches.

GRASSES

Bromus riparius Rehm. - PI-297887, 888, 889

Of the three accessions all showed a variable population. All had abundant foliage and matured about the same time. PI-297888 showed greatest vigor and spread. Some leaf disease was apparent. The species is described as a slow sod former.

Bromus tomentellus Boiss. - PI-283200

As previously reported in 1961, this tufted perennial is found in mountain pastures of the Near and Middle East, preferring alkaline soils. We have yet to find one that will perform here; however we did get a fair amount of seed.

Bromus willdenowii Kunth - PI-284108

Rescuegrass.

This accession is an annual here, although most rescuegrasses act as biennials. This introduction is characterized by having all decumbent culms.

Calamagrostis arundinacea (L.) Roth - PI-283206-207; 286474

Reedgrass.

PI-286474 died in the summer without heading. PI-283206 and 283207 produced very little stem and leaf material in the spring of 1965, but 283206 did produce a trace of seed. Original seed of PI-283206 and 283207 went to New York, and original seed of PI-286474 went to New York and Michigan.

Cenchrus ciliaris L. - 14 accessions in 1965

Buffelgrass.

PI-299505, 299512 and 293325 proved to be the best seed producers of the 14 accessions tested. Many spread up to four feet, while PI-299513 spread to five feet. Original seed of PI-298977 through 298980 went to the Mississippi PMC, while BN-reproduced seed of PI-298977 through 298980 went to Florida and Hawaii. BN-reproduced seed of the other ten accessions went to Mississippi, Florida and Hawaii.

26 accessions in 1966

All out of South Africa from a collection by Dr. A. J. Oakes, New Crops Research Branch, ARS. Most bloomed all summer and had to be collected all summer. Total height varied from 36 to 48 inches. Leaf height varied from 22 to 38 inches, and plant width from 20 to 40 inches. Some accessions were blue in color and some were green. PI-299544 had both tall and short plants and must be separated when grown again. Seed production was good on all accessions. Small quantities shown in the charts mean only a few plants to play with.

Cenchrus echinatus L. - PI-257689

Southern sandbur.

A weed in our southern states. The burs are spiny and stick to animals and people very well. It is a little more aggressive than our C. tribuloides. No distribution will be made.

GRASSES

Chloris gayana Kunth - PI-298981 through PI-298984
Rhodesgrass.

Of these four accessions tested in 1965, PI-298981 was the most aggressive spreader. Only 289982 was a poor seed producer, the other three yielding several ounces of seed. Original seed of all four introductions was sent to Mississippi.

Seven more accessions were grown in 1966. Bloom and maturity dates were quite close. PI-299550 could be called the most aggressive since it spread six feet during the summer. Contrariwise, 299552 spread only 30 inches, and was the shortest.

Dactylis aschersoniana Graebn. - PI-283241-242

This cool hardy perennial is native to the Scandinavian countries of Europe and to West Russia. Both accessions produced an abundance of forage in spring and fall. Both also yielded a good seed crop, but were subject to leaf spot. Original seed of each went to New York, and BN-reproduced seed to Michigan, Missouri, Washington and Idaho.

Dactylis glomerata L.
Orchardgrass.

All accessions tested, with the exception of BN-14807, a BN selection out of Spain, and BN-15621 from Greece, were received from Hungary. BN-14807 is probably the hispanica type, with small stature, late bloom, late maturity and poor seed production. The Grecian accession had very poor winter survival. Since only one plant was received, we have open pollinated seed. These have not been distributed.

The Hungarian accessions bloomed and matured about the same time; there was not much difference in leaf height. All were good seed producers. The best one, PI-289001, yielded 16 ounces of seed from a twenty-foot row. BN-reproduced seed of these Hungarian accessions has gone to New York, Michigan, Missouri and Washington.

Dactylis glomerata ssp. hispanica - PI-306730

Winter-growing perennial through the Mediterranean region. PI-306730 was winter-killed here after having sparse fall recovery, was subject to leaf spot disease and produced very little seed. Also, it was not a good forage producer.

Dactylis voronovii Ovcz. - PI-283243

This cool hardy, tufted perennial is not as aggressive as D. glomerata and does not produce as much seed. Neither do its forage production and winter-hardiness compare favorable with D. glomerata. Original seed of this accession went to New York; BN-reproduced seed to Michigan, Missouri, Montana, and Washington.

Dactyloctenium australe Steud. - PI-299588
Durban grass or coast grass (S.Afr.)

A stoloniferous perennial from the coastal areas of Eastern South Africa. The species performs as an annual at Beltsville. It is used extensively as a lawn grass in the coastal areas of eastern Cape Province and Natal, where it is evergreen. It is a good sand binder and sometimes a pioneer on sand dunes; tolerates shade. This accession had spread from single plants to five feet by the end of summer. We

will get seed set in the greenhouse in December. Vegetative material has been sent to the Florida PMC, and to the Georgia Experiment Station.

Digitaria smutsii Stent. - PI-296569, 296571
Smutt's fingergrass.
Both these accessions produced an abundance of basal leaves and thrived in our hot, humid summer weather. PI-296571 produced stolons in 1965, which is not characteristic of D. smutsii; however, true stolons did not appear when we replanted this item in 1966. The species keeps blooming all summer. We sent original seed of both accessions to the Florida PMC, and our BN-reproduction to Hawaii.

Digitaria violascens Link - PI-312905
This accession came in as vegetative material from Ecuador, and was grown in the greenhouse. There is not too much forage value seen for this species. It is self-pollinating.

Echinochloa colonum (L.) Link - PI-292598
Jungle ricegrass.
This quick maturing summer annual is confined to wet swampy areas and riverbanks. We got two seed crops from the same planting - one in June and one in August. This species has become naturalized in the southern United States.

Echinochloa holubii Stapf - PI-299897
Holub's panicgrass (S.Afr.)
In its native habitat, this species is found in wet areas along with Paspalum and Phragmites in 23 to 30 in. summer rainfall zones. Our plants produced an open sod and showed evidence of rhizomes. This is a warm tender perennial at Beltsville, with abundant stems and few leaves.

Elymus andinus Trin. - PI-297896
This perennial from Chile is usually found in the shelter of bushes. One could interpret this to mean it is highly palatable and disappears under grazing pressure. We started out with 50 plants and had only 8 left by spring 1966. These remaining plants, from which we collected our seed, look pretty close to Agropyron sibiricum.

Elymus arenarius L. - PI-297344-345
Lyme grass; dune wildrye (European).
These two accessions, from Norway, appear to be typical for this sand dune binder. They took two years to spread 18 inches, but did show good drought resistance. Self-fertile?

Elymus patagonicus Speg. - PI-297898
This introduction performed very poorly here. Half of the plants passed on the first winter and second year recovery was very poor. The accession is highly variable, with both blue and green plants. This one is a bunch grass.

GRASSES

Elymus villosus Muhl.ex Willd. - PI-297899
Hairy wildrye.

This is a cool hardy perennial bunchgrass that produces abundant leaves in spring and abundant seed heads in summer. It did not bloom until late July when other Elymus spp. were ripe. Size was approximately 38-30x15 inches. Maybe we can get some seed next year - there was no fill this year.

Elytrigia scythica Nevski. - PI-283272

A cool hardy perennial native to Russia. Our accession produced an abundance of forage in late spring but the leaves died in July and only seed heads remained. This is supposedly a synonym for Agropyron scythica. Original seed went to Idaho.

Enteropogon simplex (Schum. & Thom.) A.Chev. - PI-299905
Mopane grass.

Dr. Oakes collected this at Kruger National Park in 15-20 in. rainfall area at 1000 ft. elevation. It is a tufted, warm tender perennial here. Native to Africa, it is commonly found in association with Aristida and Eragrostis spp. Seed production at Beltsville was not good, even though it had a long blooming period.

Eragrostis atherstonei Stapf - PI-299038; 299906

PI-299038 is perfectly selfed, as we received only one clone. Some use of this species is being made in South Africa for sand dune control work. PI-299906 had abundant stems and good density. It spread by rooting at the nodes. Additional trials should be run on this species in areas with milder climate than Beltsville. PI-299906 is a prolific seeder - we obtained 2 ounces of seed from 7 plant divisions.

Eragrostis bicolor Nees - PI-299907
Vleigrass.

This is supposed to be a small perennial, densely tufted at the base, with short horizontal or oblique rhizomes. Since it acts as an annual here, perhaps it did not have time to make the rhizomes, because ours is a bunchgrass. I would describe it as a groundcover not a forage producer. The species is known to occur only in drier parts of the Cape, Orange Free State and Southwest Africa.

Eragrostis capensis (Thunb.) Trin. - PI-299908-909
Cape lovegrass.

Occurs in most of South Africa. This warm tender perennial bunchgrass produces abundant basal leaves but stiff, heavy, non-palatable stems. PI-299908 was more vigorous and larger in size. We sent BN-reproduced seed to Arizona, New Mexico, Georgia and Texas.

GRASSES

Eragrostis chloromelas Steud. - PI-299910-911
Boer lovegrass.

There was not too much difference visable here between these two accessions. Both were about the same size and matured seed at the same time. PI-299910 came from hard dry sand on the Mooi River Plain, Natal in 20-in. rainfall belt. PI-299911, with glaucous leaves, came from a mountain plateau in Orange Free State with annual rainfall of 35 inches, elevation 5500 ft.

Eragrostis curvula (Schrad.) Nees - PI-298985; 298986; 299914
Weeping lovegrass.

'Ermelo' (298985) and 'Cullinan' (298986) have been around and under test for years, being first introduced under PI-164917 and 164918 respectively. 'Kromdraai' (299914) is a selection from the Estcourt Research Farm in Estcourt, Natal. Of the three accessions Ermelo was hardy, Cullinan was completely winterkilled and Kromdraai was severely injured. All three accessions were good seed producers.

Eragrostis obtusa Munro - PI-299944-945; PI-299947
Duvatgras (S.Africa)

This is a weedy little grass with 6-12 in. tufts which might be expected, as it comes from and 8-20 in. rainfall area of South Africa. We got two seed crops, the first in late July and the second the first of September. Being what it is, we marked it strongly aggressive.

Eragrostis superba Peyr. - 12 accessions
Wilman's lovegrass. Masai lovegrass (S.Africa).

These were collected at elevations from 500 to 4500 ft. All except PI-299961 were from the 20-30 in. rainfall belt. We are hoping that one or more of these might show more hardiness than has been observed in the last 20 to 30 years. As was to be expected, uniformity of ripening was only fair to poor.

Eragrostis sp. - BN-15863

This accession has been identified as Eragrostis papposa (Duf.) Steud. Native distribution is the Mediterranean region, extending to northwest India. The species was described in our 1961 report. This accession might be looked at in drier areas of the United States. It is supposed to be attractive as an ornamental. BN-reproduced seed has gone to the Arizona and Texas PMC's.

Eragrostis sp. - PI-299963

A small, tufted bunchgrass, this appears to be a summer annual here. Should be looked at in low rainfall areas. It is a 'cut-and-come-again' type as far as seed heads are concerned. Herbarium has been submitted for identification.

GRASSES

Festuca arundinacea Schreb.
Tall fescue.

PI-283276 through 283301 from various countries came to us from Australia through the Plant Introduction Division, C.S.I.R.O. All except those which winterkilled remained in the comparison block. Since no seed was collected from any of the accessions, only vegetative material is available for distribution. Those which were tender or performed rather poorly were the accessions from the Mediterranean area - Israel, Morocco, Tunisia and Southern France. Contrary to expectations, those from Portugal performed well. No outstanding selections were made. Original seed of all introductions went to New York PMC.

Three additional accessions, PI-292602 through 292604, came from Israel. All performed very well, particularly in spring recovery. If we had to pick one as best, we would choose 292602. Seed of all three accessions is available.

Festuca ovina L. - PI-289652
Sheep fescue.

This accession had good, abundant spring recovery, but very poor fall recovery. It produced abundant growth in its seedling year; second year a good seed crop. Original seed was sent to the Washington PMC as Festuca sp.

Festuca rubra L. - BN-15289; PI-289653; 289656
Red fescue.

PI-289653 produced more forage and was definitely rhizomatous. PI-289656 had better fall recovery and produced a better seed crop. This accession (289656) produced both blue and green plants. Herbariums were taken and submitted for identification. As received from Spain, this accession contains both F. rubra and F. ovina. The F. rubra portion, blue plants, will be separated and retain PI-289656. The F. ovina portion, green plants, will be separated and numbered PI-312225, BN-17090.

BN-15289, a selection out of PI-200321 at the Regional P. I. Station, Geneva, N.Y., was planted as seed and came up with a variable population. Sod rating was fair.

Festuca sp. - PI-289651; 289654

These introductions seem to be identical in appearance. Both are close to F. arundinacea. Both had good spring recovery and sparse fall recovery; are somewhat rhizomatous; also good seed producers. Original seed went to the Washington PMC. Herbariums have been submitted, but identification has not been made.

Hordeum bulbosum L. - PI-287840; 306731
Bulbous barley.

This winter-growing perennial from the Mediterranean Region has ecological requirements similar to those of Phalaris aquatica. It is very drought resistant and withstands intensive grazing. Is particularly adapted to

soils of medium to heavy texture. It goes completely dormant at Beltsville during summer, in spite of rains, and comes back with a flush of growth as the weather cools in the fall. The accession from Spain, PI-287840, appears a little more leafy. Both accessions were hardy here.

Koeleria caudata (Link.) Steud. - PI-289658
A dense, tufted perennial from the Mediterranean region, this cool hardy bunchgrass produces abundant late spring growth but goes dormant during the hot summer months. This is a good seed producer. Original seed was shipped to Arizona and Washington.

Koeleria vallesiana (Hack.) Bertol. - PI-289659
Somerset grass.
A densely tufted perennial usually restricted to limestone areas. It is a native of the western Mediterranean region, is a quick-maturing species, dormant during the hot summer months. Fall recovery was sparse. Original seed went to Arizona and Washington.

Lolium perenne L.
Perennial ryegrass
Of the six accessions tested in 1965, PI-284826 was the leafiest and the best seed producer. All were Australian selections except BN-15277 which we received as plants from NE-9. Apparently we received one clone only, as very little seed was produced.

Lolium perenne X multiflorum - PI-285100
Short-rotation ryegrass.
The cross, L. perenne X multiflorum, did not perform as well for us as the straight L. perenne. Apparently the L. multiflorum influence made these plants susceptible to winter injury.

Lolium remotum Shrank. - PI-283612-613
Hardy ryegrass.
This annual ryegrass, with awnless, long, plump florets, has found its way into the flax fields of North Dakota. I believe the origin is Russia. Since it dies rapidly after seed matures and has few stems and leaves, I don't know why anyone would want to test it further. We shipped some of the original seed to the Michigan PMC.

Lolium rigidum Gaud. - PI-298416
Wimmera ryegrass
This is another ryegrass which is not very impressive here. Seed was sent to the California PMC so they can compare it with 'Wimmera-62'.

Lolium temulentum L. - PI-298417 302664
Darnel.
This quick-maturing cool annual produces a good seed crop, but offers no summer forage. The species is native to the Mediterranean region and is common throughout much of the United States. The grain contains the alkaloids temulin and loliin; causes poisoning in many animals and in man. These had best die in storage unless someone wants them for breeding purposes.

GRASSES

Miscanthus sinensis Anders. - PI-286483
Chinese silvergrass.

This is a robust perennial bunchgrass to nine feet tall. Although usually grown as an ornamental we are looking at it as a potential windbreak. Vegetative divisions will be available in the future.

Oryzopsis miliacea (L.) Benth. & Hook. - PI-289642
Smilograss

None of the smilos perform well in our humid climate, and this one was no exception, as we got a little seed and then it was winter-killed. Seed was received as Agrostis sp., so some of the original went to Missouri and Washington. We have enough seed for testing in California where it belongs.

Panicum antidotale Retz - PI-284150; 300034
Blue panicgrass.

Many P. antidotales are hardy here, but PI-284150 out of Senegal, isn't. It is a horse, up to five feet high, and really put out a good seed crop. Some leaf spot was evident. Since it looked so good, we have distributed it to Florida, Hawaii, Arizona, Georgia and California. Perhaps this way we can get a quick report on its climatic adaptability.

PI-300034 apparently has been around the world, since the species is native to India and the South African Experiment Station from which the seed was obtained got it from Argentina. It is a strong grower but a foot shorter than the other accession. We do not expect it to be hardy.

Panicum coloratum L. - 6 accessions
Kleingrass.

Of the four accessions tested in 1965, we found two to be upright and bunch type; PI-298988 and 298989 were prostrate spreaders in excess of ten feet in one season. Both were from Rhodesia, but only 298989 matured seed sufficiently early to give a good supply. The other needed a longer growing season.

The two accessions tested in 1966, 300039 &-041, were small, not exceeding 3 ft. Part of this may have been due to extended drought. Also, both matured their seed earlier than the accessions tested in 1965.

Panicum deustum Thunb. - PI-299040

This was received as one clone of vegetative material and turned out to be a cross-pollinated species. As a result, only a few weakly-selfed seed were collected. The plant had mostly stems and very few leaves, and was a tufted perennial bunchgrass. The species is native to tropical, coastal southeast Africa, palatable and abundant in some areas of the Kruger National Park.

Panicum maximum Jacq. - 5 accessions
Guineagrass.

These accessions range from 42 in. to 72 in. in height. All looked pretty good, except PI-300054, which was shy on stems with most of the leaves basal. Typical of the species, seed must be collected very often when it appears green, as it shatters very readily.

Panicum meyerianum Nees - PI-299000
Buffalo grass (S.Africa).

This accession is probably not P. meyerianum, which is a glaucous, leafy perennial forming tufts, native to eastern tropical Africa where it is found growing in wet places, often on riverbanks. PI-299000 was stoloniferous, suberect, spreading to 12 ft. Fill was very poor. It matured here in October.

Panicum miliaceum L. - PI-289320-337; PI-290726
Proso millet. Millet panic.

Most of these introductions were excellent birdfood, as we raced the birds all summer in order to get any seed at all. Don't know whether the heavy seed producers are a reflection of lower palatability or our skill in outwitting our feathered friends. Those interested in wildlife food should request all accessions that we can furnish.

Panicum stapfianum Fourc. - PI-300058-059
Thompson grass (S.Africa).

P. stapfianum consists of a wide range of ecotypes and grades into P. coloratum. This species should be planted with and tested against P. coloratum. Uniformity of ripening of these two introductions was only fair. PI-300058 was a better seed producer than the other.

Pappophorum mucronulatum Nees - PI-284169
Whiplash pappusgrass.

This species, out of Argentina, also occurs in low places on plains and valleys of Texas, Arizona and northern Mexico; has spread by getting in sheep's wool. PI-284169 was a warm hardy perennial which showed indeterminate bloom and produced an abundance of seed, which shattered readily. Some original seed went to Arizona, New Mexico and California.

Pennisetum asperifolium (Desf.) Kunth - PI-292455

We would call this a warm tender perennial. Its stems were tough and leaves few. It was slowly rhizomatous; might make erosion cover but forage value is very low. We have had trouble getting seed to set.

GRASSES

Pennisetum macrourum Trin. - PI-300084
Beddingras (S.Africa).

Not much to be said about this perennial from South Africa since we had only one plant. It is probably cross-pollinated, as we got very poor fill. Described in the literature as having a stout, short, creeping rhizome; grows mostly in wet areas; is eaten by cattle but leaves are somewhat harsh.

Pennisetum purpureum Schum. - PI-304188 through 304193
Napiergrass. Elephantgrass.

This is a tall, stout, erect, deep-rooted perennial resembling sugarcane in habit and in ecological requirements. It is a native of tropical Africa in areas of not less than 40 in. of rainfall, is drought resistant and will not grow well on sites subject to flooding or waterlogging. All six accessions wanted to grow out the top ventilator in our greenhouse. Stem size varied from 1/8" to 1/4" (PI-304191) to 5/8" to 11/16" (PI-304090). We shipped vegetative material to Florida before destroying the plants.

Phalaris aquatica L.

Toowoomba canarygrass. Bulb canarygrass.

Most of the accessions grown were received as plants from a collection made by Dr. R. M. Love, University of California, Davis, in Greece and Israel. We have a little seed of all accessions but it is open pollinated because they were planted in a large block. Some accessions exhibit good spread. As a group they varied in amount of leaves produced and spring recovery. Two accessions were produced from seed - PI-284206 and 302473. Both showed a variable population, but 284206 was far superior, both in total growth and spring recovery, than the other accession.

Phalaris aquatica X arundinacea - BN-13575

We took seed from tall plants of a Phalaris aquatica X arundinacea cross and lined out 120 plants. The first winter we rogued out a lot of them. We also threw away smaller plants and thus reduced the inventory to 28 plants. We believe we have a fairly uniform population by now. Plants average 44 in. tall, somewhat shorter than mother plants, but site and severe drought may have made the difference.

Phalaris arundinacea L. - PI-297362
Reed canarygrass.

We don't know whether this accession from Norway is reacting to latitude or not, but for two years it has refused to send up seed heads. It has been very leafy and green all summer and has spread well.

Phalaris canariensis L. - PI-284182
Canarygrass.

This quick annual bunchgrass set us a fair seed crop and was complete by the first of July. It had more stems than leaves.

GRASSES

Phalaris coerulescens Desf. - PI-306758
Sunolgrass.

Another one of Dr. Love's collections that we received as vegetative material. Survived our winter but is sparse on foliage. Both years it had matured its seed by the last of June. These winter-growing, early-maturing species do not do well at Beltsville.

Phleum pratense L. - Timothy

Of the six accessions tested, PI-284244, 'Vetrovska' from Poland via Australia, out-performed the others in forage production both spring and fall, and in seed production. It was also larger in size. BN-15278 and BN-15304 are pasture-type accessions - do not produce much seed and are ground-spreaders. BN-15304 winter-killed here. PI-284244 through 284247 have been sent to New York, Idaho and Michigan. No distribution has been made of BN-15278 and BN-15304.

Poa compressa L. - PI-284252-253
Canada bluegrass.

Both accessions had late, abundant spring recovery in 1965, but were affected by the summer drought and did not have good fall recovery. PI-284252 was a little better seed producer and more aggressive than the other. Original seed of both went to Washington, and BN-reproduced seed to New York and Michigan.

Of the two accessions planted in 1966, PI-204485 appeared to be a denser sod whereas PI-297363 had the greatest rate of spread.

Poa marginata Ovcz. - PI-283958

A perennial bunchgrass native to Central Asia. Australia received it from the Tashkent (U.S.S.R.) Botanic Gardens and sent us some seed. It did not perform well here; probably needed a higher, drier climate. Original seed was sent to the Washington PMC.

Poa nemoralis L. - 4 accessions
Wood bluegrass.

Four accessions of wood bluegrass were brought in, as we were looking for a plant to put in shady places, the characteric locale for this species. None of them seem to have much to offer, since many of the plants died in the field. All showed signs of summer dormancy. Severe infestation of Chalcid took its toll on seed production.

Poa pratensis L.
Kentucky bluegrass. - PI-283959 through 283961; PI-289643

PI-283643 - Poor in forage and seed production, dormant during the hot, dry summer, died in the fall.

PI-283959 - best accession tested. Produced abundant spring and fall forage and good seed crop.

Of the five accessions planted in 1965, PI-258786 went wild and spread to 33 in. by the fall of 1966. The others were normal in amount of spread. Sod rating for 258786 is good.

GRASSES

Secale montanum Guss. - 4 accessions
Mountain rye.

This species originates in the Anatolian Plateau south to Morocco and east to the Orient. Ecotypes from the milder climates are considered to be short-lived winter-growing perennials, whereas those from the cold regions are cold hardy, with a fast flush of spring growth. Of those tried at Beltsville, only PI-297962 made it through the winter. I doubt that this is a lack of hardiness, however, since the plants were sick all summer long in addition to being infected with rust.

Setaria chondrachne Honda - PI-286487

This warm hardy perennial is native to Japan. It is rhizomatous and matures early in October. Needs a longer growing season to produce a good seed crop. Original seed went to Hawaii, Florida, Mississippi and California.

Setaria flabellata Stapf - PI-300109
Small creeping millet.

This species is widely distributed in eastern regions of South Africa, mainly in the coastal districts. It is frequently an important constituent of Pure and False Grassveld. It is a tufted perennial with slender, creeping rhizomes and often stolons. Ours was a rhizomatous bunchgrass that did not bloom until September. It needs a longer growing season and milder climate for a true performance rating.

Setaria italica (L.) Beauv. - PI-290456 through 290466
Foxtail millet.

These introductions from Hungary are pretty good bird food. We had trouble getting seed of many of the accessions because the birds, especially finches and indigo buntings, liked them so well. We collected over a pound of seed from each of four of these accessions. Those interested in wildlife food production should request all accessions that we can furnish. California, Florida and Hawaii have received seed of all eleven accessions.

Setaria neglecta DeWit. - PI-300110

This is a warm tender perennial with short, stout rhizomes. The species occurs only in southeast Africa, and is a robust tufted plant with long leaves and spike-like panicle, with bristles often shorter than the spikelets and often hidden by them. Our accession had abundant basal leaves but only a fair seed crop over a long ripening period.

Setaria phanerococca Stapf - PI-299044; 299072

This species is a native of Rhodesia. At Beltsville it performed as a vigorous, annual bunchgrass, making excellent growth in the dry summer months. It should be tried in an area which has a longer growing season because it produced seed late in September. It shattered readily when ripe. Seed of both accessions was shipped to Florida and Hawaii.

Setaria sp. - PI-300114

Seed of this introduction was received from South Africa as Setaria sp., but has been re-identified as Pennisetum setaceum (Forsk.) Chiov., which is of North African origin, cultivated as an ornamental in parks and gardens. It is similar to Pennisetum villosum in appearance, having attractive feathery inflorescence of purple or rose color. It is a warm tender perennial bunchgrass with abundant leaves and stems, good seeding habits, and good vigor. BN-reproduced seed has gone to California, Arizona, and New Mexico PMC's.

Setaria sp. - BN-17107

We picked this up in Lewes, Delaware, in the salt marshes. It is a coarse annual with few coarse stems and few basal leaves, but a good seed producer. Seed heads are large, in excess of 12 in. long. Could be a good wildlife food for marshy situations. A herbarium has been submitted for identification.

Sorghastrum nutans (L.) Nash - BN-14739, M-5734

Although good and leafy, we don't believe this is any better than 'Cheyenne'. It's an extremely late bloomer, mostly September.

Sporobolus fimbriatus Nees - PI-300123

Perennial dropseed grass.

This one out of Africa grows in the 15-in. rainfall zone. A densely tufted warm tender perennial, it has short rhizomes and basal leaves. In past years a few of this species have proven to be hardy here, but for the most part they act as annuals. I am told that there is always trouble getting a stand on range seedings.

Tetrachne dregei Nees - PI-300136-137

Karoo grass.

This species occurs only in Cape Province, Orange Free State and Basutoland in South Africa. Both introductions were hardy tufted perennials here, producing abundant forage in late spring and in early fall. Both are good seed producers. PI-300136 is the larger of the two accessions.

Tetrapogon mossambicensis (K.Schum.) Chippind.ex B.S.Fischer

PI-300139 was a tufted, slightly stoloniferous, glaucous warm tender perennial here. Spikes were usually 3-5, straw-colored, variegated with purple. The species is from Swaziland and the eastern Transvaal in Africa. It grows in wet places. This accession bloomed and was collected all summer. Leaves were basal, seed set was fair.

Urochloa mosambicensis (Hack.) Dandy - PI-314886

Sabi grass. Goya grass.

Species is from Natal, the Transvaal and Bechuanaland in South Africa. It is a warm tender perennial here that went wild in the greenhouse. It is stoloniferous, sometimes rhizomatous and roots from lower nodes. According to an Australian report, the species needs 22 in. or more of summer rainfall, produces good grazing and is drought-resistant. Ours bloomed all summer in our hot greenhouse and seed was collected over a period of three months.

GRASSES

Grass spp. - 11 accessions

These came in as vegetative material from a collection made in Central and South America by Dr. W. T. Atkinson of the Department of Agriculture, Sidney, N.S.W., Australia. All appear to be common *Dactylis glomerata* L., and are hardy here. Some have good spread for one year's growth in the field, and good fall recovery in 1966. Seed is available for interested parties.

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LEGUMES & OTHER

Adesmia angustifolia Hook. & Arn. - PI-285103 through 285105

Species is native to South America, and is an annual, prostrate, fine-leaved, growing on deep soils in areas with less than 4 inches rainfall per year. PI-285104 had the most abundant growth. All three accessions shattered their seed excessively if it was not collected as soon as it ripened. Seed would germinate as soon as it fell on the wet gravel bed. Original seed of each introduction has been sent to California.

Adesmia bicolor (Poir.) DC. - PI-285106

This native of South America is abundant in the fertile pastures of Argentina and Uruguay. It is rhizomatous and stoloniferous, also drought resistant. Stems of this perennial are prostrate, seed does not shatter much, and it spreads at a fast rate once it is started. Original seed went to California PMC.

Adesmia filifolia Clos - PI-285107

Native of South America. A rather erect annual with a few basal branches and very fine leaves. Our accession was tap-rooted, rather weak in aggressiveness, and its seed shattered excessively. Original seed went to California.

Adesmia incana Vogel - PI-285108

This native of South America is indigenous to areas of Argentina with 700-1000 mm. annual rainfall. It is perennial, rhizomatous and stoloniferous, sericeous, strictly psammophilous, and produces good forage. The yellow flowers of this rapid-growing sand binder are much visited by bees. Our accession of this prostrate, cross-pollinated species spread to ten feet in the greenhouse, and seemed to have better forage production than most of the other species of *Adesmia* tested in 1965. Original seed of this also went to California.

Adesmia microphylla Hook. & Arn. - PI-285109

Another South American native, this erect perennial shrub grows to six feet, with slightly spinescent branches and small pinnate leaves with very small leaflets. It grows on shallow soils, rocky hillsides, and is lightly grazed. This cross-pollinated, long-day plant has only grown to about two feet in height in our greenhouse after one and a years. The spines are very fine and stick you before you realize they are present on the plant. No distribution.

Adesmia muricata (Jacq.) DC. - PI-285110
Species is native to South America, and is a sub-erect annual that is self-pollinated. This accession is a good seed producer, but shatters excessively. Original seed went to California.

Adesmia reclinata P. Munoz - PI-285111
Native of South America - a perennial with branches crawling along the ground. It is fairly leafy and flowers freely; is grazed by sheep and occurs on the better soils (loamy and sandy) in the 11-in. rainfall area near the coast. It is cross-pollinated - tripping failed to set seed. Original seed to California.

Adesmia tenella Hook. & Arn. - PI-285112 through 285114
This native of South America comes from areas with less than four inches of rainfall per year, and is a prostrate annual with fine leaves. All three accessions are self-pollinated and shatter excessively. PI-285113 produced the most seed and did not suffer from disease. California received some of the original seed.

Anthyllis tetraphylla L. - PI-292846; 297878
Four-leaf Anthyllis
Native to the Mediterranean region, this perennial herb (an annual here) is prostrate, self-fertile, and has yellowish flowers which bloom all summer. It is of open habit. Each inflated seed pod has two seeds. Not distributed.

Anthyllis vulneraria L. - PI-290709
Kidneyvetch.
This deep-rooted perennial, with pinnate leaves and red or yellow flowers, is drought resistant, and grows well on poor sandy or calcareous soils in parts of Europe and Western Asia. Our accession had abundant leaves and few yellow flowers, but did not set seed. Its flower heads were to 9 in., leaves to 4 in., and it spread 10 in. Deer ate it in late summer.

Anthyllis vulneraria ssp. maritima L. - PI-292782
This perennial is similar to A. vulneraria, but did not stand our winter well. We sowed more seed than we got back. No distribution.

Argyrolobium abyssinicum Jaub. & Spach. - PI-273864
This introduction from Ethiopia is an annual, self-pollinating, with yellow flowers. It produces very open plants and is probably not suited for forage. Ours lived for a year and a half, but did not bloom until a year old. Seed was sent to the Florida PMC.

Argyrolobium uniflorum (Dcne.) Jaub. & Spach. - PI-292384
We compared this A. uniflorum with PI-233223, also from Israel, and believe it is probably a second shipment of the same accession. It is a warm tender perennial, has yellow flowers, is skeletonlike in appearance and is suberect and cleistogamous. Probably will not be grown again as it appeared to have no conservation value.
Distribution: Arizona PMC.

LEGUMES & OTHER

Astragalus cicer L. - PI-297335; 292787
Cicer milkvetch.

PI-292787 was poor in comparison to other accessions. Winter-hardiness was as good as any A. cicer, but it did not bloom the first year; was probably hurt by acid clay site. It was not distributed.

PI-297335 was an excellent forage producer. It bloomed a little the first year and spread to 54 in. by the end of the second year. The second year's seed production was good, spring and fall recovery good also. This one was grown on sandy soil. Deer will eat it. Seed went to New Jersey, Kansas and Washington PMC's.

Astragalus falcatus Lam. - PI-297336; 292788
Sicklepod milkvetch.

PI-292788 was planted in a acid clay site - thus poor performance. This rhizomatous perennial from Sweden had a poor seed crop and little fall recovery. Arizona and Idaho received some of the original seed.

PI-297336, on a sandy site, did not bloom the first year, but produced an excellent seed crop the second year - 150 grams from a 20-ft. row. Spring and fall recovery was abundant. Flowers were a yellow-green and in a terminal cluster. Spread by the end of the second year equaled 30 inches. Seed went to Washington, Arizona and Idaho centers.

Astragalus glycyphyllos L. - PI-297337

This native of central Europe is a perennial to $3\frac{1}{2}$ ft, stems prostrate or ascending, glabrous; leaflets 4-6 pairs, large, oval; flowers yellow, in racemes whose peduncles are about one half as long as the leaves. The pod is cylindrical, acute, glabrous. The species is similar in appearance and growth habit to A. cicer. This accession produced abundant spring and fall growth and spread to 44 in. by the end of the second year in the field. Seed production was good - 5 ounces from a 20-ft. row. The plant is rhizomatous and likes a sandy site. Arizona, Washington and Idaho centers received seed.

Coronilla varia L. - 'Ky-63' - BN-15876

This good looking, vigorous strain had abundant spring and fall recovery, and had spread to 48 in. by the end of the second year. It is a good seed producer. Distribution: New York, Georgia, Michigan, Missouri, New Jersey and Kentucky plant materials centers.

Clitoria rubiginosa Guss. ex Pers. - PI-298605

The species, native to tropical America and the West Indies, is a tender, prostrate, perennial vine that will not mature here due to our short growing season. It is found with both cleistogamic and chasmogamic flowers, which are supposed to be white with a dark center. Some original seed was sent to Mississippi. As of January 1967 we are getting a few cleistogamous pods now in the greenhouse.

Crotalaria sp. - PI-192957

For four years we tried to find out what this semi-woody Crotalaria from Ethiopia is. We finally got a few blooms on it in June 1965, but they promptly blasted. We have finally discarded it to make room for new plantings. A couple of grams of original 1950 seed are still in stock. Has never been distributed.

Desmodium perplexum Schub. - 'Clanton' tickclover.

This variety is a warm hardy perennial at Beltsville. Frost on October 4 got the flowers, so we got no seed. Wildlife ate it when it was small, but didn't seem to bother the plants as they grew larger.

Desmodium polycarpum DC. - PI-257712

This accession, received from Australia, is a semi-woody, warm tender perennial. Stems are moderately abundant to few, and are erect and decumbent. It bloomed from November through January in the greenhouse, and may be cross-pollinated - it must be tripped. Plants have been sent to the Florida PMC.

Desmodium purpureum Fawcett & Rendle - PI-299090

An annual with erect woody stems two to four feet high, trifoliate leaves and lax racemes or panicles of pale blue or purplish flowers. It is a native of the West Indies and tropical America. Proved to be a good seed producer here. It has been grown in the southeastern United States for hay, green manure and wildlife food. Original seed went to Florida.

Desmodium racemosum DC. - PI-286475

The species is native to Japan. The pink flowers of this perennial shrub are borne in long, erect axillary clusters. We found it to be a short-day plant with good seeding habits and little shattering of ripe seed. We sent some of the original seed to Hawaii, Florida and Puerto Rico.

Dorycnopsis gerardi Boiss. - PI-289650

A native of the Mediterranean region, this warm hardy (?) perennial is prostrate, with abundant soft leaves and stems, and rose colored flowers. It is probably cross pollinated. Original seed of this introduction went to California.

Eriosema parviflorum E. Mey. - PI-199333

Widely spread legume of tropical Africa. It is perennial, with solitary, sub-erect to prostrate stems, and few leaves. It does not appear to have any conservation value. We have made no distribution.

Galactia acapulcensis Rose - PI-188883

This warm tender perennial vine does not appear to be palatable, but would provide fair ground cover. It has weakly selfed pink flowers, and was a short-day bloomer with an indeterminate bloom period in our greenhouse. It proved to be a good seed producer, and the Florida and Hawaii centers received some of the seed.

Hedysarum coronarium L. - PI-283346
Our hot summer resulted in poor performance from this one here. We have had no bloom in two years. Some of the original seed went to California.

Hedysarum procumbens Mill. - BN-7899
It has been difficult to get a few seed back from this warm tender perennial from Spain. It is not very aggressive; has red flowers. Plants died of root rot in the fall of 1966. Like H. coronarium, it needs limestone soil. No distribution.

Heylandia latebrosa DC. - PI-189494
A native of India and Ceylon, this species is a constituent of grasslands in the Bombay region. It is an annual, prostrate, herbaceous, hirsute plant. Flowers are yellow, small, in the leaf axils. It is probably cross-pollinated, as we got no seed set.

Hippocrepis bourgaei Font - PI-287833
Syn. H. glauca ssp. bourgaei
A native of southern Europe, this herbaceous, prostrate plant grows on dry or barren areas, blooming in April-May. We couldn't keep it alive to bloom. Some of the original seed went to California.

Hippocrepis glauca Ten. - PI-287835-836
This native of southern Europe is a prostrate species growing on barren or dry areas. PI-287835 (received as H. comosa L.) had woody stems. Both accessions died without bloom. Was sent to California.

Lathyrus annuus L. - PI-308015
A climbing annual with moderately abundant stems and leaves. Flowers are yellow, 1-2 per peduncle. Our plants had to be destroyed because of disease, so no seed was collected. It was not distributed.

Lathyrus aphaca L. - PI-308016
Yellow vetchling.
This small, climbing annual from Europe, western Asia, and North Africa, grew well in our greenhouse. Flowers were yellow, self-pollinating. Uniformity of ripening was only fair, shattering of seed medium. This might have cover crop use south of Beltsville, Maryland.

Lathyrus articulatus L. - PI-308017
An annual from the Mediterranean region; climbing; leaflets linear-lanceolate; flowers rich purple with white or rose-lilac wings, usually solitary. Our accession, from a Czechoslovakian Botanic Garden, had few stems and leaves, reddish-purple flowers with white wings, and was self-pollinated. Uniformity of ripening was poor; shattering was little.

Lathyrus cicera L. - PI-308018
Flatpod peavine.
This is another small annual from Europe with little forage production. Flowers are red, on $\frac{1}{2}$ in. axillary peduncle. It is self-fertile, and has good uniformity of ripening.

Lathyrus clymenum L. - PI-308019
A Mediterranean annual. Petioles winged. This introduction was a good seed producer with poor ripening and no shattering. Slight disease present.

Lathyrus hirsutus L. - PI-308021
Rough peavine.
This annual from southern Europe and northern Africa is low in forage production. It has been naturalized in the southern United States and is supposed to be useful for pasture, hay and silage, although reported to be toxic to stock when in flower. This introduction was a good seed producer, but had poor uniformity of ripening and medium shattering. This species has pubescent seed pods.

Lathyrus inconspicuus L. - PI-308022
Species is a small annual with bipartate stipules and pale lavender flowers that are inconspicuous. Seed production of PI-308022 was good, uniformity of ripening good, shattering medium. It is self-pollinated.

Lathyrus nissolia L. - PI-308025
Grass pea.
The species is native to grassy and stony places in the Mediterranean region, and is a small annual with low forage production, parallel veined leaves, no tendrils, and single, self-fertil rose-colored flowers. The plants are grasslike in appearance. PI-308025 shattered excessively, and uniformity of ripening was poor.

Lathyrus ochrus (L.) DC. - PI-308026; BN-17136
Both accessions were comparable except in seed production. Forage production is low. Both are self-pollinated and have pale yellow flowers. Stems were broadly winged. The species is supposed to be valuable on light soils as a source of winter forage in milder climates.

Lathyrus sphaericus Retz. - PI-292796; 308029
Species is native to sandy places and cultivated ground in Europe, the Caucasus and North Africa. It is an annual. Plants are small, open, with red flowers. Stems are fine. It is self-pollinated. We observed excessive shattering and fair to good uniformity of ripening.

LEGUMES & OTHER

Lathyrus tingitanus L. - PI-308031
Tangier pea.
This annual from the Mediterranean region is occasionally cultivated as an ornamental in Europe, elsewhere as forage or green manure. It is a robust climbing plant with large red flowers. Our accession produced a fair amount of forage material, was a good seed producer with very little shattering, and had fair uniformity of ripening.

Lathyrus sp. - PI-200058
PI-200058 from Iran is a small annual, weak here, but still producing an abundance of fine stems and moderately abundant leaves. It had single white flowers that are selfed. Seed production was not good, but uniformity of ripening was fair. Shattering was not evident. We are waiting for an identification.

Lespedeza bicolor Turcz. - 'Delaware Select Strain No. 1'
Seed of this strain was received from the Delaware Game and Fish Commission. This L. bicolor, not as large as 'Natob', reached only four feet at this center. Also, it winter-killed back to the ground here. We think it would be a better seed producer in an area with a longer growing season.

Lespedeza bicolor f. acutifolia Matsum. - PI-286477
This accession from Japan also killed back to ground level in the winter. It needs a longer growing season for better seed production.

Lespedeza cuneata (Dumont) G.Don - BN-4666
Original seed of this lespedeza was picked up at the Belle Glade Experiment Station in Florida in 1947. It is unusual for any lespedeza to succeed and mature a seed crop in southern Florida. It is not a bad seed producer here at Beltsville, and is perfectly hardy. Plants are erect and sub-erect. This one should provide good cover for birds and be suitable for roadside plantings as well as for forage.

Lespedeza japonica L.H.Bailey - BN-6448
A variant found in BN-2279, L. bicolor 'Natob'. It is a good seed producer, dying back to the ground during each winter. Total height was five feet. Leaves were not abundant.

Lespedeza maximowiczi Schneider - BN-2230
Original seed came from the Arnold Arboretum in Jamaica Plain, Massachusetts. The species is a shrub to 10 ft. in Korea, its native area. Our accession was 44 in. high and most of the plants killed back to ground level each winter. It is a good seed producer. It may be subject to some leaf disease.

Lespedeza repens Bart. - BN-15539
Creeping lespedeza.
Original seed of this accession was collected from a native stand along the Baltimore-Washington Parkway in Maryland by Arnold Davis and Phil Hager. The species is a trailing perennial, native to the United States, with stems to 2 ft. long and violet-purple flowers. It is almost as prostrate as L. pilosa, and a good seed producer. It might be good for ground cover in summer drought.

Lespedeza robusta Nakai - BN-4920
This perennial shrub-type was 37 in. in height and spread to 30 inches. It kills back to the ground every winter. Only one plant matured seed here, yielding 19 grams; the other plants were caught in flower by frost.

Lespedeza serpens Nakai - PI-193950; 297385
This is a hardy perennial to 6 in. tall here. Spread is 18 - 30 inches. Seed production is good. It will be put in trials with prostrate sericea, L. intermixta and other prostrate forms.

Lespedeza striata (Thunb.) Hook.& Arn. - PI-296574
Common lespedeza.
This introduction is a prostrate annual with abundant stems and leaves. Drought did not bother it at all. Frost got it before bloom or seed. It should be a good green manure or ground cover plant. We have a small amount of original seed left. It has not been distributed.

Lotononis bainesii Baker - PI-299104
This species comes from South Africa, near the Tropic of Capricorn. It is a perennial (annual here), highly stoloniferous, cleistogamous, and frost tolerant to 20°F. It likes sandy soils, and 35 inches of rainfall per year. Seed count runs 1,571,000 per pound. Rhizobium CD-360 is a must. The plant is a non-toxic forage producer, with small yellow flowers on top of long flower stems. The boys down south should try it - it's too late for our location.

Lotus conimbricensis Brot. - PI-308033
Cool annual, native to sandy or coastal sites in the Mediterranean region. It is delicate, and culture is not easy. Plants are fine textured, prostrate, with self-pollinating small white flowers. This introduction is a good seed producer, with good uniformity of ripening and no shattering. It is not as dense as we would like to see.

Lotus corniculatus L.
Of the twelve accessions tested in 1965, PI-285279, 285283 and 290375 were the best looking. These had abundant spring recovery in 1965 and abundant recovery after being cut July 30, 1965 (right in the middle of the dry period). All were good spreaders and produced a good seed crop. PI-285281 looked good in 1964, but did not do so well in 1965. Original seed of all accessions went to Michigan, Missouri and Oregon; PI-286468 and 286469 went to Washington and New York; 290375 and 290376 also to Washington.

Lotus corniculatus L. - BN-14762 (NY-3789)
Birdsfoot trefoil.

This accession from Chautauqua County, New York, was tested in 1966. It produced an abundance of vegetative material and spread to 42 in. in two years. Seed production is good but uniformity of ripening is only fair. It retained a good green color all summer, and spring and fall recovery was abundant. Deer and spittlebugs liked it.

Lotus creticus L. - PI-292407
Silvery birdsfoot trefoil.

This species occurs in dry coastal sandy places in the Mediterranean region - Egypt, Lebanon, and Palestine. It is a tender perennial silky-hairy herb, with trifoliate leaves on short stalks. Flowers are yellow, 1-5 on long peduncles. It is cross-pollinated, shrubby and has a gray appearance. Israel has it on trial for sand dune stabilization. Original seed of this introduction was sent to Arizona and Oregon.

Lotus cytisoides L. - PI-292611

This tender coastal perennial from the Mediterranean region is shrubby in habit and resembles L. creticus. Foliage production is not abundant. Ours bloomed June through September, but failed to set seed even though available to insects.

Lotus hispidus Desf. - PI-308036

Species is a trailing annual from the Mediterranean area. It is reported to be drought resistant and in production in New Zealand as a fodder plant for many years. This prostrate plant shatters excessively when ripe; however, uniformity of ripening is good.

Lotus mearnsii Britton - PI-284761

A native of Arizona, this may be useful on old lake bed soils where the soils have a high pH value; it is supposed to occur there naturally. In Arizona it grows in areas from 3000 to 7000 feet, on dry mesas and slopes. It is a hardy perennial and a good seeder. Plant is self-fertile, and this accession had good fall recovery by September 1. Original seed went to Hawaii.

Lotus ornithopodioides L. - PI-269853; 308038; 310413

This is native to the coastal regions of the Mediterranean countries, the Caucasus and Asia Minor, growing in sandy and grassy fields. It is a stout annual, with large rhomboidal leaflets and small yellow flowers in clusters of 2-5 on long peduncles. The plant is sub-erect to prostrate, self-fertile, and sets a good seed crop, with some shattering.

Lotus palustris Willd. - PI-292408

The species is a perennial, of moist (sometimes alkaline) soils of the Israeli plains and along the Dead Sea, growing mainly along ponds, rivers and artificial ponds. It is native to wet place of Asia Minor. It is a soft-villous annual here, with 2-5 flowered umbels. This accession was rhizomatous and prostrate.

Lotus parviflorus Desf. - PI-308039

This accession started out as weak transplants. It failed to set seed in the greenhouse, where it bloomed in May. We put it out in the field on the first of June where it promptly died without setting seed.

Lotus tenuifolius Presl. - PI-292409

syn. L. tenuis Waldst. & Kit.

This accession, a native of Sicily, was weak here, and winterkilled. It probably would do better in California's climate. The plants were open and straggly, sub-erect to prostrate, and produced little seed. Original seed went to Arizona, Missouri, Oregon and New York.

Medicago gerardi Waldst. & Kit. ex Willd. - PI-308057

Seed of this annual was received from a Czechoslovakian Botanic Garden. It had a few prostrate stems but abundant leaves; bloomed in March and April, but failed to set seed. The flowers were yellow.

Medicago intertexta (L.) Mill. - PI-308058

This is an annual from the Mediterranean region. Flowers and foliage are very showy; flowers yellow and leaf centers red. Spread was good but stems few. Seed pods were spiny; seed production fair. The plant is similar in appearance to M. arabica.

Medicago littoralis Rhode ex Lois Delong. - PI-226647

Coast medic.

Native to coastal dunes of the Mediterranean region, this medic had practically spineless seed burrs. This introduction had good seeding habit, but shattered excessively.

Medicago marina L. - PI-292417

The species grows along the seacoast of the Mediterranean region of Europe, Asia and Africa. It is a perennial, sand-loving, with long crawling hard stems. Leaves and stems are velvety, flowers yellow and probably cross-pollinated. Original seed of PI-292417 was sent to Florida and California.

Medicago minima (L.) Grufb. - PI-227032

Little medic. Small woolly bur medic.

This species is found in Europe, Western Asia and North Africa. Ours seemed to be an open, poor accession - was weedy and shattered excessively.

Medicago murex Willd. - PI-227025

This introduction produced strong plants, was aggressive, and was a good seed producer, with little shattering. We observed no insect or disease problems.

Medicago noeana Boiss. - PI-308061

Native area of this species is Asia Minor and Syria. It is an annual with prostrate stems and spineless, 3-coil seed pods. Flowers are yellow, self-fertile. Uniformity of ripening is fair, and shattering medium. The plant dropped many of its leaves in the early summer heat.

Medicago orbicularis (L.) All.
Button medic.

Of the five accessions tested in 1965, PI-227030 and 292422 were the best seed producers, even though they were the smallest in total spread. These two accessions also had the best forage value. Distribution: 227030 to New York; 292419, Florida and California; 292420, Florida; 292422, Florida. PI-292421 was not distributed.

Eight accessions of button medic were tested in 1966. PI-283643 was a late accession but produced an abundant seed crop with fair uniformity of ripening, excessive shattering. PI-283644 was a more upright type, spread very well but showed some leaf disease. PI-308054 had no disease, good uniformity of ripening, good spread and good seed crop. PI-283642 and 283647 were very prostrate, only $1\frac{1}{2}$ in. tall, and produced abundant forage material - both had good seed crops. PI-283647 was the earliest of all accessions to bloom and ripen. PI-283645 was one of the best in overall performance.

Medicago polymorpha L. - PI-163369

This is an annual, with spiny, coiled seed pods. It did not come up to some of the other M. polymorpha we have tested in the past. Seed ripening was uniform, and no disease was apparent.

Medicago polymorpha v. vulgaris (Benth.) Shinners - PI-226469; 229766
Toothed burr clover.

Of the two accessions tested in 1965, PI-229766 produced the greatest amount of forage. Both produced a good seed crop, and both shattered excessively. PI-226469 went to New York and Florida; the other has had no distribution.

Seven accessions from Israel, PI-292423 through 292429, were tested in 1966. All had leaf loss due to summer heat, but all produced a good seed crop with good uniformity of ripening and medium shattering. PI-292423 had the greatest spread and was the most vigorous of the seven.

Medicago polymorpha v. vulgaris f. tuberculata (Godron.) Shinners
PI-136329; 197858

Of the two accessions, 136329 was better in forage production, seed production, resistance to heat, and total amount of spread. PI-197858 did have less seed shattering, however.

Medicago rigidula (L.) All. - PI-308055

This species was reported in 1964. This accession, too, is not as dense as we would like to see it. It did produce a good seed crop, with good uniformity of ripening.

Medicago sativa L. - PI-206453; 289661-662
Alfalfa.

Of these three accessions tested in 1965, PI-206453 (BN-15316) had the best performance, but even this was not exceptionally good, as it suffered from disease during the hot, humid summer. It spread well, however, and showed good fall recovery.

Medicago scutellata (L.) Mill.
Snail medic.

There were four accessions tested in 1965. PI-292433 produced the most seed. It had coarse stems. All four matured about the same time, all shattered excessively, and none appeared diseased. Distribution: PI-284122 to California and New York; 292432 to California; 290379 and 293433, not distributed.

Medicago tornata (Willd.) ex Ces., Passer. & Gibelli - PI-308062

This species is a prostrate, pubescent annual, native to Italy, with flowers in clusters, small, 1-3 per group. Pods are broad and flat with 4-8 spineless coils. Our accession was somewhat open, shattered excessively, spread vigorously and produced a good seed crop.

Medicago tribuloides Desr.
Barrel medic.

Four accessions were tested in 1965. PI-287888, out of Spain, produced the largest spread and most forage. It was late maturing, had fine, spiny seed pods, and did not appear to have any disease. All four accessions went to California; PI-287888 also went to Florida.

PI-198661 was tested in 1966 as M. truncatula v. tribuloides, a synonym. It should be classified as an average M. tribuloides, because of poor ripening of seed and average forage production.

Medicago tuberculata (Retz.) Willd. - PI-292437 through 292439
Cogwheel medic.

All three accessions tested in 1965 had non-spiny seed pods. PI-292437 was the most aggressive spreader and did not drop its seed pods when ripe. PI-292439 produced the most forage and seed.

PI-186964 was tested in 1966. It had spiny pods - is possibly a wrong identification. A good accession - forage production, seed production, heat resistance, uniformity of ripening, all rated as good. It did not shatter.

Medicago turbinata laevis - PI-184753

From Portugal out of Australia, this accession formed a good mat of cover only 2 in. high. An early-blooming annual that is a good seed producer. Ripening was uniform, with medium shattering of seed. The pods are spiny.

Melilotus alba Desr.
White sweetclover.

PI-290382 was the best of the five accessions tested in 1965. Winter survival was good, it was palatable to deer and produced a good seed crop. The other accessions barely made it through the winter. PI-290390 was received as M. leucanthus Koch, a synonym for M. alba Desr. The Washington PMC got seed of 290383.

Melilotus alba v. annua Coe. - PI-181438; 308066
Hubam clover.
Both accessions produced good seed crops, but were sparse in forage. Both were poor in uniformity of ripening.

Melilotus altissimus Thuill. PI-290387; 292799
Tall sweetclover.
This biennial, yellow-flowered species is from western Europe - southern Sweden to the Mediterranean seaboard. It thrives in lowland wet habits - meadows and pastures. Common name seems to be a misfit, for our plants were rather low-growing. It flowers and fruits in June-July, and retains leafiness during the bloom period. Both accessions tested were severely damaged by insects, disease and cold. Neither produced seed here. PI-292799 did manage to bloom but died before seed was set. Original seed of this PI was sent to Missouri and Washington PMC's.

Melilotus elegans Salzm. ex DC. - PI-308067
A Czechoslovakian Botanic furnished the seed of this annual. Our plants were small, producing little forage. Flowers are yellow. Seed production was fair to poor, but uniformity of ripening good. Shattering medium.

Melilotus indicus (L.) All. - PI-292613
Annual yellow sweetclover.
This sweetclover was weak here. It produced little seed and had little forage value. We sent some of the original seed to Washington.

Melilotus infesta Guss. - PI-290389
This is an annual from Hungary, with not much better forage production than M. elegans. It didn't like our warm greenhouse, and disease got to it also. Flowers were yellow. Seed set was poor, but ripened uniformly without shattering.

Melilotus officinalis (L.) Lam.
Yellow sweetclover.
PI-290388 (received as M. arvensis Wellr., a synonym) was the largest and tallest of the four accessions tested. It suffered insect and deer damage, but produced a good seed crop. PI-289315 was a smaller type, producing an abundance of seed with little shattering. The other two accessions tried were weak and diseased in this climate. PI-289313 through 289315 were distributed to the midwest centers.

Melilotus wolgicus Poir. - Russian or Volga sweetclover.
This biennial from Soviet Russia has a high coumarin content, is self-pollinated, and drought resistant. It tolerates a wide range of soils - saline to clay. Flowers are white. The species is supposedly more winter-hardy and drought-resistant than white or yellow sweetclover.

PI-290392 had early, moderately abundant spring recovery, and

produced a good seed crop with little shattering. The plants were 24x36 in. by May 26. PI-283663 was weak, had little forage value and failed to produce seed. Winter damage and rabbit damage were severe. We sent original seed of 283663 to the Washington PMC.

Ononis alopecuroides L. - PI-292442
Foxtail restharrow.
This one is another dryland Mediterranean species. Our plants had mostly stems and few leaves below the terminal clusters of small purple flowers. The accession seemed to be a heavy water user in the greenhouse. It produced a good seed crop with very little shattering.

Ononis viscosa L. - PI-186333
We received seed from Cyprus by way of Australia. The species is a native of Europe, North Africa and western Asia, and is a solitary annual with little forage value. It has self-pollinated white flowers like peas. Seed pods are similar to peas, but very pubescent. Seed did not shatter, but uniformity of ripening was poor.

Psoralea sp. - PI-275616
Plants of this one remained small here even though they grew during the hot summer months. They did not bloom, and were winterkilled. Some original seed was sent to California.

Sanguisorba minor Scop. - 8 accessions
Small burnet.
Some of the accessions tried (PI-297950-951-952, 269396) acted as perennials, but died the fall of the second year. Both root rot and winter damage were responsible. The other accessions stood our climate and diseases a little better. Two accessions were good in seed production, three good in plant material produced. Only PI-297950 was poor in seed production and plant material production. PI-297953 was a sub-erect to prostrate type, which we have observed before. Seed head heights are: 297951-23"; 297952-23"; 297955-18"; 297957-18"; and 297960-16".

Sanguisorba polygama Nyland - PI-297957
S. polygama is described in "The Flora of U.S.S.R.", Vol. 10, 1941, as an arctic and subarctic race with blood-red flowers. Our accession has white flowers and is from Italy, so is probably not S. polygama. An identification will be made on it in 1967. PI-297957 is a good seed producer, and is perfectly hardy here at Beltsville. Enough said, until identity is determined.

Sanguisorba spp. - PI-297960-961
PI-297960 was received as S. muricata, and 297961 as S. verracosa. Herbariums have been submitted for identification. Both accessions are from the Mediterranean area. All but one plant of each winter-killed or died of disease. We managed to get a little seed of each, however.

Scorpiurus muricata L. - PI-292466
Prickly scorpiontail. Two-flowered caterpillar.
The species occurs on dry areas along the Mediterranean coast - Egypt, etc. Our accession was an annual, from Israel. It was weak in the greenhouse, producing little forage, few seed, and was susceptible to blight. Original seed went to the California PMC.

Sesbania sp. - BN-4935, PI-none
This is probably S. emerus (Aubl.) Urban. It is a woody herb, growing to 8 ft. in our greenhouse; a single-stem plant, very open, with few branches, and yellow and black spotted terminal flowers. It is probably cross-pollinated. The seed pods are about 6 in. long and thinner than a pencil. No seed shattering was observed.

Tetragonolobus palaestinus Boiss. - PI-308070
A native of the Mediterranean area and the Middle East that is found on brown rendzina soil or semi-limestone. It is a small annual leafy herb with large, solitary crimson or red flowers borne on short peduncles. Our accession produced open plants that grew to 10x38", bloomed in May, but died before setting seed. We will try for seed in '67.

Tetragonolobus purpureus Moench. - PI-308071
This accession from the Middle East was an open, sub-erect annual. It had deep red flowers and produced a little seed. It is supposedly excellent forage. The square pods, with four prominent wings, did not shatter when ripe.

Tetragonolobus requienii (Mauri) Fisch. - PI-308072
This is the best of the Tetragonolobus spp. tested this year. It formed a green mat of cover 4"x 30" in the greenhouse. Grew well until the heat of June, which caused it to produce only a trace of seed.

Trifolium ambiguum Bieb. - PI-297979-980
Kura clover.
A cool hardy perennial with a creeping rhizome that withstands inundation, high water table, trampling and grazing. It is suitable in pasture rotation areas with bog soils too severe for red clover. Plants spread to about 15 in. here and produced only a small amount of seed. The flowers are showy, and the leaves large, but there weren't enough of either. No shattering of seed.

Trifolium burchellianum Seringe in DC. - PI-300147
This species is considered to be the most cold tolerant of all indigenous South African clovers. It is perennial, procumbent, with rooting stems 1-2 ft. long; leaflets broad; flower heads similar to white clover. Found in moist forest margins at altitudes from 1800 to 4000 meters, Kenya. It spreads rapidly and forms a good mat of cover like T. repens. Our accession withstood heat and drought very well in summer. Seed production was not exceptionally good - it is probably cross-pollinated. Fall recovery was early and abundant, but the plants will probably winterkill here. Flower height is 9 in.

Trifolium campestre Schreb. - syn. T. procumbens L.
Large hopclover.

PI-292469 was a vigorous accession with good forage production. Flowers were weakly selfed. Seed did not shatter.

Trifolium cherleri L.
Cupped clover.

PI-284001	Earliest accession in flowering and seed ripening. An average producer of seed and forage
PI-284016	A leafy accession. Growth slow but strong. Seed production fair.
PI-284017	Non-leafy accession. Excellent seed producer.
PI-284018	Abundant foliage. Latest maturing of all
PI-284019	Poor seed production in 1966.
PI-284020	Abundant forage. Seed poor.
PI-284021	Non-leafy accession. Best seed producer in 1966.
PI-284022	Moderate amount of forage. Poor seed production.
PI-284023	Excellent forage production. Seed production fair.
PI-284024	Excellent forage producer. Largest spread of all T. cherleri tested. Very poor seed producer.
PI-284025	Moderate amount of forage. Poor seed production.
PI-297981	Excellent seed and forage producer.
PI-297982	Good forage and seed production.

Trifolium clypeatum L. - PI-292472; 308079
Helmet clover.

PI-292472, tested in 1965, was a good forage and seed producer, had good spread, no disease problems.

PI-308079, grown in 1966, had disease problems and lost most of its seed crop. Disease may have come from lupines in the same greenhouse. The accession did produce a moderate amount of forage.

Trifolium dubium Sibth - PI-308092
Small hopclover; or suckling clover.

Species is native to Europe but naturalized in North America. It is an annual with good foliage production and abundant yellow blooms. Our accession yielded a good amount of seed, and did not shatter when ripe. It is self-pollinated, and it produced an abundant amount of leaf material.

Trifolium echinatum v. carmeli (Boiss.) Gib. & Belli - PI-284009-010
Received as T. carmeli.

Both accessions produced a good amount of forage, and are strong, good spreaders. They are cross-pollinated and produced little seed.

Trifolium filiforme L. - PI-186968

This species favors dunes and riverbanks and is found from the Mediterranean along the Atlantic coast to southern Norway. It is an annual with pubescent stems and few branches. The flowers are yellow, and the seed egg-shaped. It is close to T. dubium, and occurs with it in Europe. It is weakly self-fertile, and has a fibrous root system. Our accession produced a good spread, and we observed no disease, no shattering.

Trifolium glomeratum L. - PI-168637; 263246
Cluster clover.

This species is an important constituent of pastures for sheep and cattle in the Mediterranean region. It has been reported to be a good plant for gully plantings by sheer profusion of seed set. We received in excess of an ounce of seed from seven pots. Seedlings were strongly aggressive.

Trifolium hybridum L. - 10 accessions
Alsike clover.

PI-284273 seemed best in overall performance. It produced moderately abundant forage, had good size and spread, and also yielded a good seed crop. Fall recovery of this accession in 1966 was good. PI-290731 had the best uniformity of ripening. PI-284277's uniformity of ripening was good in July 1966, and it came back for a second crop in late September - hence the long seed collection period shown in the charts. PI-284278 had the best seed crop for the length of bloom period and seed collection.

Trifolium leucanthum v. obscurum Vis. - PI-308083

This species is native to stony places on the slopes of Mediterranean mountains. Our accession had abundant leaf production but died of disease before flowering. It is an annual.

Trifolium maritimum Huds. - PI-284855

This is an annual of the Mediterranean region, found on wet land and shallow saline soils, also on prairies and moist fields. Our plants died of disease before seed was produced, but did manage to bloom. The flowers were white with a pink-tipped banner.

Trifolium medium L. - BN-14733 (G-13238, Vt.); PI-241117; 284621; 297381
Zigzag clover.

BN-14733 was growing well and in bloom on June 15, 1965, but almost burned up due to drought by July 1. All tops died, but regrowth started again by August 1. There was no seed production in 1965, but we got a trace in 1966.

PI-241117 was a little more open, more heat and drought tolerant than the other accessions. It had late, sparse recovery in the spring of 1965, but abundant recovery in spring of 1966.

PI-284621 and 297381 produced more forage than the other numbers, but they are not as rhizomatous. They are larger in spread, but most of this is from a central crown. Seed production of all zigzag clovers is small and these were no exception.

Trifolium megalanthum Steud. - PI-297988

This native of the coastal range of Chile favors sandy soils. Plants are prostrate and root at nodes on the stems. Flowers are large, red or pink. It is a cool tender perennial which goes

dormant in summer and regrows in the fall from the crown. Our accession grew well in the greenhouse after almost dying in the field the first year. It bloomed in March and April, but failed to set seed even with tripping. The flowers are very fragrant. When we returned the plants to the field in 1966, they promptly died. The flowers reflex after blooming.

Trifolium nigrescens Viv. - PI-297993-996
Ball clover.

We have trouble getting seed from this species, because if the plants are left in the greenhouse they will not cross-pollinate, and if they are planted outside they burn up by the end of July, due to heat, disease and drought. We do have a little seed for distribution.

Trifolium ochroleucon Huds. - PI-308084

A softly hairy perennial; native to England, France, the Mediterranean area; southern Russia, Crimea and Asia Minor. It is leafy and drought resistant but produces little seed. Produces good foliage on calcareous soils and provides nutritious hay. Our accession produced abundant basal leaves and a good supply of seed heads, but few seed. Shattering was little or none. The flowers are whitish yellow in large globular heads. Flower height is 10 in., while most leaves are basal, at 3 inches.

Trifolium palaestinum Boiss - PI-292476 through 292478
Palestine clover.

All three accessions were pretty sparse and open, although one had a 2-1/2 ft. spread. These rapidly-maturing, hairy annuals are good seed producers, with strong seedling vigor.

Trifolium pilulare Boiss - PI-292480
Pill clover.

The species was previously described in our 1964 annual report. It is rapid-maturing and early blooming, and is surely a pill the way those hairy gray balls fall off and blow all over the greenhouse; i.e., excessive shattering.

Trifolium pratense L. - PI-289665; 290738
Red clover.

The one from Spain (289665) had very good seed production. Drought took its toll of both accessions, and neither showed much resistance to mildew and insect attack. PI-290738 had white reflexing flowers, was prostrate and rhizomatous. This accession was probably white clover, but it was dead before a herbarium could be made.

Trifolium purpureum Loised. - PI-292482 through 292484
Purple clover.

Even though these accessions were held in the greenhouse from date of seeding until maturity in the first week in July, insects refused to come in and pollinate them, although they worked other species of clover. Consequently we got only a trace of seed, and this probably the result of the species being weakly selfed. Abundance of bloom should provide for good seeding habits if conditions are suitable for pollination.

Trifolium resupinatum L. - PI-284288 through 284291
Persian clover. Shaftal clover.

Of the four accessions tested, we had two normal and two of the giant strains, the latter having a spread of five to six feet. Early bloom failed to set because of cool weather, but late bloom produced an abundance of seed in the greenhouse. Field plantings of these same accessions, put out in early May, failed to respond.

Trifolium sariosiense Hazsl. ex Neibr.- PI-292827

Supposedly a synonym for T. medium - if this is true, then this accession produces more forage material than all the other T. mediums at the NPMC in 1965 or 1966. It is a good spreader and had abundant spring and fall recovery. Seed production is not good. It did not seem to be bothered by drought. Seed heads do not shatter.

Trifolium spumosum L. - PI-292621
Bladder clover.

This glabrous annual is native to Southern Europe, East Africa and western Asia, in moist pastures of the coastal regions and prairies. In fruit, the calyx becomes bladder-like. The species is early-maturing, producing an abundance of hard seed. We scarified ours to get it to germinate. The plant is not very high but has a good spread.

PI-308089 produced good foliage and spread well, but all flower heads were empty because it was diseased. We will probably grow this one again for a seed supply.

Trifolium stellatum L. - PI-198099, 200412, 292622
Starry clover.

The species was reported previously, in the 1964 report. PI-198099 and 292622 were much more leafy than the accession from Jerusalem. If you get your seed crop at the right time, there is little to moderate shattering. If a few days late, it will be scattered for you.

Trifolium striatum L. - PI-284293

This is an annual - prostrate in dry habitat and erect in moist habitat. The flowers are small, pink, and self-pollinated. This accession produced a moderate amount of forage material. Ripening was fairly uniform, and there was no shattering. The plants were not too large - 5"x 12".

Trifolium tembense - PI-197895

This species is native to high mountains of Africa - Abyssinia, Uganda, Belgian Congo, Kenya - and is found mostly between altitudes 1800 to 2400 meters. In trials at Kenya, it proved inferior to T. ruepellianum; however Kitale, where it was tried, is not high enough. The species likes poorly drained sites. It is a quick annual, perfectly self-fertile, producing an abundance of seed.

Trifolium tomentosum L. - PI-292623; 287962

Woolly clover.

Species was described in the 1964 annual report. Apparently it is naturalizing itself in the dry, thin pastures of North Island, New Zealand. Neither of our two accessions was outstanding.

Trifolium tridentatum Lindl. - PI-308091

Tomcat clover.

The species is a glabrous annual with erect or ascending stems, 1-2 ft. high; leaflets linear or lanceolate, sharply serrate. Flowers are purple, often tipped with white, in rather large heads. It is common on hills and valleys in California. Our accession produced a moderate amount of forage material, but was rather prostrate. Uniformity of ripening was good, but shattering was excessive. Crown rot developed during hot period in June.

Trifolium usambarense Taub. - PI-284298

Background information on this species was given in our 1963 annual report. Apparently it is now being tried in Taiwan. Although we had difficulty with earlier accessions, this one had abundant leaves and stems, and was a good seed producer. It ought to get on the high-rainfall Hawaiian mountains.

Trigonella corniculata L. - PI-220123

Horned trigonella.

We grew this accession as a winter annual, closing out seed production about July 1. It is hard to see it in this category, since ecotypes are found in southern Europe and the Orient from 5,000 to 12,000 ft. When seed is ripe, the rains had better stop, because they will germinate under moist conditions as soon as they fall from the plant.

Vicia amoena Fisch. ex DC. - PI-286489

Back in 1960 we reported on another accession of this species. We have been trying to get good growth and seed set ever since, because the species has good characteristics as a plant for roadbanks, being highly rhizomatous. It never thickens up though, and we can hardly get enough seed to extend trials. The Washington PMC received some of the original seed of this accession.

Vicia angustifolia L. - PI-294277 through 294286

Narrowleaf vetch.

Ten accessions were involved in our 1965 plantings. This is no place to test actual performance of this species, but we did get seed

increase on all accessions that ranged from 8 grams to 49 grams, the highest producer being PI-294280. Most accessions were direct seeded.

Vicia dumetorum L. - PI-286212
German vetch.
This is another perennial vetch from Eurasia. Our seed came from Czechoslovakia. Plants made a 30 inch spread and came back quite strong in the spring of the second year. We still have the original plants and have seed for distribution. Original seed went to Georgia, Hawaii and Washington.

Vicia narbonensis L. - PI-294296 through 294303
Narbonne vetch.
We have much better luck with Narbonne vetch in the greenhouse than we do in direct field plantings. We did get seed increase on all except two accessions. The species is used for fodder and green manure in southern Europe, and is tolerant to acid soils.

Vicia pisiformis L. - PI-286214 Pea vetch.
We started this perennial in the greenhouse during the winter of 1963, and finally got our seed increase in August 1965. It is a larger climber, up to six feet in its native habitat, with underground spread to two feet. It is a native of central Europe and western Asia on soils derived from limestone. Performance for us was much better than V. amoena from Japan. It is hardy here.

Vicia sativa L. - PI-294642 through 292645
Common vetch.
These spring vetches are named varieties received from France. They were direct seeded March 3, 1965. Don't know whether fertilizer, drought or warm spell caught them, but they amounted to little and we barely got our seed back; however, they have been sent to Georgia, Washington, and Florida.

Vicia tenuifolia Roth - PI-286216
Bramble vetch.
We received this perennial from Czechoslovakia. Twice it failed to set seed in this southern latitude, so we are going to send rhizomes to the New York PMC - perhaps they will report on it in a couple of years.

Vigna sinensis (Torner) Savi - PI-291139 through 291143 - Cowpea.
Five accessions were tested. All produced a massive amount of vegetative material. All are named strains from Australia, and were planted direct here on May 7, 1965. Spread was very good on all, but PI-291141 was more upright than the others. PI-291140 was the earliest bloomer and produced most seed. PI-291139 did produce a little seed after blooming in September. PI-219142 was so late that no bloom was observed before frost. The strains were: 'Malalbar' (291139); 'No. 12148' (291140); 'Poona' (291141); 'Cristando' (291142); and 'Reeves' (291143). Useage of these strains would depend on length of growing season for good seed production. Original seed of all were sent to Hawaii.

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APPENDICES

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LEGEND FOR GRASS PLANTINGS

HABIT: C-Cool; W-Warm; H-Hardy; T-Tender; P-Perennial; A-Annual; B-Biennial
STEMS: *-Stoloniferous; A-Abundant; MA-Moderately Abundant; F-Few; E-Erect; S-Sub-erect; P-Prostrate
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic
BLOOM DATE: *-Greenhouse
MATURE SIZE: Head height-Leaf height x Spread (inches)
SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

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SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1965 Grass Plantings - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	AGROPYRON										
12485-61	desertorum	283162	Engl.	C H P	A E	MA BC	C	June	23-16x11	July	46 gm.
12486-61	elongatum	283163	Portu.	C H P	A E	A B C		June	38-24x20	July	56 gm.
12487-61	elongatum	283164	China	C H P	A E	MA B&C		June	30-20x15	Jul/Aug	118 gm.
12489-61	obtusiusculum	283166	Germany	C H P	MA E 1/	F B&C		June	36-18x16	Aug	14 gm.
12490-61	pungens	283167	Portu.	Only perennial ryegrass came up - contaminate							
12492-61	rigidum	283169	Germany	C H P	F E	F B&C		June	30-30x8	Aug	1 gm.
	AGROSTIS										
12494-61	alba	283171	Czecho	C H P	MA E 1/	MA B&C		June	30-22x17	July	48 gm.
12495-61	alba	283172	Czecho	C H P	MA E 1/	MA B&C		June	30-16x22	July	49 gm.
13882-62	sp.	289644	Spain	C H P	A E 1/	F B&C		June	26-10x14	July	49 gm.
	ALOPECURUS										
13884	pratensis	289646	Spain	C H P	MA E 1/	F B C		May	26-7x12	May/June	1 gm.
	ANDROPOGON										
12501-61	distachyus	283179	Lebanon	W T P	A E	A B	winter-killed	July	29-17x25	Aug/Oct	1 gm.
12502-61	distachyus	283180	Israel	W T P	A E	A B	winter-killed	Jul/Aug	32-14x15	Sept/Oct	1 gm.
15477-64	gayanus	299027	S.Rhod.	W T P	A E	MA B C	C	Nov/Jan*	60-60x16	-	-
	ARRHENATHERUM										
12505-61	elatius	283185	France	C H P	A E	A B C		May	36-22x18	June	118 gm.
12507-61	elatius	283187	Poland	C H P	A E	MA B C		May	40-20x20	June	41 gm.
12508-61	elatius	283188	Portu.	C H P	MA E	A B C		May	38-22x15	June	4½ oz.
	BRACHYPODIUM										
12514-61	phoenicoides	283194	Portu.	C H P	A E 1/	MA B		June	30-12x14	July	3¼ oz.
	BROMUS										
15144-63	danthoniae	297886	W.Pakis.	A	Died in field without much growth						
13893-62	erectus	289655	Spain	C H P	A E	MA B C		May	28-14x18	June	5½ oz.
	CALAMAGROSTIS										
12525-61	arundinacea	283206	Poland	C H P	F E	F B		June	42-15x9	June	Trace
12526-61	arundinacea	283207	USSR	C H P	F E	F B&C		June	42-18x12	June	-
13625-62	arundinacea	286474	Japan		All dead by August						
	CENCHRUS										
14636-62	ciliaris	293325	Argent.	W T P	A E	A B C	Apom.	Jun/Aug	36-26x48	Aug/Oct	19 oz.
15351-63	ciliaris	298977	Rhodes	W T P	A E	MA B C	Apom.	Jun/Sept	32-29x36	Jul/Oct	5½ oz.
15352-63	ciliaris	298978	Rhodes	W T P	MA E	A B C	Apom.	Jun/Sept	32-25x36	Jul/Oct	13 oz.

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POLLINATION: S-Self; C-Cross; A-Apomictic
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SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1965 Grass Plantings - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	CENCHRUS										
15353-63	ciliaris	298979	Rhodes	W T P	MA E	A B C	Apom.	Jun/Sept	38-27x30	Jul/Oct	9 oz.
15354-63	ciliaris	298980	Rhodes	W T P	A E	MA B&C	Apom.	Jun/Sept	36-30x40	Jul/Oct	21 oz.
15467-64	ciliaris	299504	S.Afr	W T P	MA E	MA B C	Apom.	Jun/Sept	36-29x36	Jul/Oct	24 oz.
15468-64	ciliaris	299505	S.Afr	W T P	A E	MA B C	Apom.	Jun/Sept	36-32x48	Jul/Oct	31 oz.
15469-64	ciliaris	299506	S.Afr	W T P	MA E	MA B C	Apom.	Jun/Aug	26-21x30	Jul/Oct	15 oz.
15470-64	ciliaris	299507	S.Afr	W T P	MA E	MA B C	Apom.	Jun/Sept	29-22x36	Jul/Oct	8 oz.
15472-64	ciliaris	299509	S.Afr	W T P	MA E	A B C	Apom.	Jun/Sept	42-36x48	Jul/Oct	5½ oz.
15473-64	ciliaris	299510	S.Afr	W T P	MA E	MA B C	Apom.	Jun/Sept	36-30x30	Jul/Oct	22 oz.
15474-64	ciliaris	299511	S.Afr	W T P	MA E	A B C	Apom.	Jun/Sept	48-42x48	Jul/Oct	5¼ oz.
15475-64	ciliaris	299512	S.Afr	W T P	MA E	A B C	Apom.	Jun/Sept	34-28x36	Jul/Oct	32 oz.
15476-64	ciliaris	299513	S.Afr	W T P	MA E	A B C	Apom.	Jun/Sept	48-38x60	Jul/Oct	8 oz.
	CHLORIS										
15355-63	gayana	298981	Rhodes	W T P	MA E *	A B C	Apom. or C	Jul/Sept	50-40x300	Sept/Oct	3½ oz.
15356-63	gayana	298982	Rhodes	W T P	MA E *	A B C	Apom. or C	Aug/Sept	42-39x108	Sept/Oct	3 gm.
15357-63	gayana	298983	Rhodes	W T P	MA E *	A B C	Apom. or C	Aug/Sept	45-40x120	Sept/Oct	6½ oz.
15358-63	gayana	298984	Rhodes	W T P	A E *	A B C	Apom. or C	July	54-36x108	Aug/Oct	7 oz.
	DACTYLIS										
12558-61	aschersoniana	283241	Germany	C H P	A E	A B C	C	May	38-16x20	June	11½ oz.
12559-61	aschersoniana	283242	Germany	C H P	A E	A B C	C	May	29-21x23	July	7 oz.
13772-62	glomerata	288997	Hungary	C H P	MA E	A B C	C	June	36-21x20	June	115 gm.
13774-62	glomerata	288999	Hungary	C H P	A E	A B C	C	May	46-29x24	June	9 oz.
13775-62	glomerata	289000	Hungary	C H P	MA E	A B C	C	May	42-22x18	June	7 oz.
13776-62	glomerata	289001	Hungary	C H P	A E	MA B C	C	May/Jun	46-30x24	June	16 oz.
13777-62	glomerata	289002	Hungary	C H P	A E	A B C	C	May	48-28x22	June	12½ oz.
13778-62	glomerata	289003	Hungary	C H P	MA E	F B C	C	May	42-20x15	June	4 oz.
14807-62	glomerata	exBN-13896	Spain	C T P	F E	F B	C	June	26-8x12	Jun/July	5 gm.
15622-64	" hispanica	306730	Greece	C T P	F E	MA BC	C	May	14-4x9	June	Trace
12560-61	voronovii	283243	USSR	C H P	MA E	MA B C	C	May	26-10x26	June	36 gm.
	DIGITARIA										
14902-63	smutsii	296569	S.AFr	W T P	MA E	A B C		Jul/Sept	60-33x20	Sept/Oct	44 gm.
14904-63	smutsii	296571	S.Afr	W T P	MA E *	A B C		Jul/Sept	50-28x35	Sept/Oct	45 gm.
	ELYMUS										
15155-63	europaeus	297897	Germany		Died without heading						

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1965 Grass Plantings - Beltsville, Md.

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	ELYTRIGIA										
12588-61	scythica	283272	USSR	C H P	A E	F C B		May	30-14x23	July	66 gm.
	ERAGROSTIS										
14492-62	bipinnata	292600	Israel		Row destroyed - was E. cilianensis						
15502-64	capensis	299908	S. Afr	W T P	MA E	A B C	S?	Jul/Aug	22-13x12	Sept/Oct	38 gm
15503-64	capensis	299909	S. Afr	W T P	MA E	MA B C	S?	Jul/Aug	20-6x10	Oct	28 gm
17716-61	cf.curvula ex	BN-13529	India	W H P	F E	MA B		Jun/July	36-16x18	Aug/Sept	1 gm
17087-65	lehmanniana		S. Afr.	contam.	ex BN-15471-64			June	24-16x22	Sept	Trace
17088-65	obtusa		S. Afr	contam.	ex BN-15471-64			June	13-7x9	Sept	Trace
14836-63	superba	295704	S. Afr	W T P	A E	A B C	S?	Jun/Aug	42-30x18	Jul/Oct	25 gm
	FESTUCA										
12592-61	arundinacea	283276	France	C H P	MA E 1/	MA B C	C	June	38-14x28	Not collected	
12593-61	arundinacea	283277	Portu.	C H P	A E 1/	A B C	C	June	36-21x35	" "	
12594-61	arundinacea	283278	Israel	C H P	F E	F B C	C	June	30-12x8	" "	
12595-61	arundinacea	283279	Israel	C H P	F E 1/	MA B C	C	June	26-15x22	" "	
12596-61	arundinacea	283280	Israel	C H P	F E 1/	MA B C	C	June	32-17x21	" "	
12597-61	arundinacea	283281	England	C H P	MA E 1/	MA B C	C	May/Jun	38-16x35	" "	
12598-61	arundinacea	283282	Morocco	C H P	F E	MA B	C	June	23-8x13	" "	
12599-61	arundinacea	283283	Morocco	C H P	F E 1/	MA B C	C	May	30-14x18	" "	
12601-61	arundinacea	283286	France	C H P	A E 1/	A B C	C	May	36-18x36	" "	
12602-61	arundinacea	283287	Czecho	C H P	MA E 1/	MA B C	C	May	37-15x40	" "	
12603-61	arundinacea	283288	Netherl	C H P	MA E 1/	MA B C	C	June	36-30x34	" "	
12604-61	arundinacea	283289	Germany	C H P	A E 1/	MA B C	C	May	36-14x38	" "	
12605-61	arundinacea	283290	Portu	C H P	MA E 1/	MA B C	C	May	41-14x48	" "	
12606-61	arundinacea	283291	Portu	C H P	MA E 1/	MA B C	C	May	35-16x36	" "	
12607-61	arundinacea	283293	France	C H P	F E	MA B C	C	June	28-18x20	" "	
12608-61	arundinacea	283294	Germany	C H P	MA E 1/	MA B C	C	May	42-18x44	" "	
12609-61	arundinacea	283295	Scotl	C H P	F E 1/	MA B C	C	May	37-13x36	" "	
12610-61	arundinacea	283296	Sweden	C H P	MA E 1/	A B C	C	May	37-20x36	" "	
12611-61	arundinacea	283297	Sweden	C H P	MA E 1/	A B C	C	June	36-20x30	" "	
12612-61	arundinacea	283298	Yugosl	C H P	MA E 1/	MA B C	C	June	38-15x42	" "	
12613-61	arundinacea	283299	Poland	C H P	MA E 1/	A B C	C	June	36-21x28	" "	
12614-61	arundinacea	283300	Poland	C H P	MA E 1/	F B C		May	36-10x48	" "	
12615-61	arundinacea	283301	Tunisia	C H P	F E 1/	MA B C		May	38-17x32	" "	

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RHIZOMATOUS: 1/

1965 Grass Plantings - Beltsville, Md.

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	FESTUCA										
13890-62	ovina	289652	Spain	C H P	A E	MA B		May	24-12x12	June	83 gm.
12630-61	pallescens	283318	Argent		Planted twice - died before heading						
13891-62	rubra	289653	Spain	C H P	A E 1/	MA B C		May	24-12x12	June	90 gm.
13894-62	rubra & ovina	289656	Spain	C H P	A E	F B		May	25-10x10	June	202 gm.
13889-62	sp.	289651	Spain	C H P	MA E 1/	MA B C		May	32-12x12	June	103 gm.
13892-62	sp.	289654	Spain	C H P	MA E 1/	MA B C		May	30-14x8	June	80 gm.
	KOELERIA										
13896-62	caudata	289658	Spain	C H P	A E	MA B C		May/Jun	21-8x14	June	116 gm.
13897-62	vallesiana	289659	Spain	C H P	MA E	F B		May/Jun	18-5x7	June	22 gm.
	LOLIUM										
13484-61	perenne	284823	Austral	C H P	A E	MA B C	C	June	24-8x10	July	81 gm.
13485-61	perenne	284824	Austral	C H P	MA E	MA B C	C	May/Jun	18-9x10	June	137 gm.
13486-61	perenne	284825	Austral	C H P	F E	F B C	C	June	23-8x18	July	34 gm.
13487-61	perenne	284826	Austral	C H P	F E	A B C	C	May/Jun	22-11x20	July	210 gm.
13506-61	perenne	285101	Austral	C H P	F E	MA B C	C	May	20-10x18	July	96 gm.
15277-64	perenne	ex-254898	Iraq	C H P	A E	A B C	C	June	18-9x12	July	1 gm.
13505-61	perenne X multiflorum	285100	Austral	C H P	F E	MA B C	C	May/Jun	24-14x22	July	54 gm
12819-61	remotum	283612	USSR	C A	F E	F B C		May/Jun	14-6x3	June	11 gm.
12820-61	remotum	283613	Sweden	C A	F E	F B C		Jun/Jul	12-6x4	July	Trace
15302-63	rigidum	298416	Turkey	C A	MA E	F B C		May	13-6x8	June	18 gm.
15303-63	temulentum	298417	Turkey	C A	MA E	MA B C		June	15-10x5	June	94 gm.
	ORYZOPSIS										
13880-62	miliacea	289642	Spain	C T P	F E	F C	C	Jun/Jul	22-11x10	July	8 gm.
	PANICUM										
13101-61	antidotale	284150	Senegal	W P	A E	A B C		Jun/Jul	60-50x30	Jul/Sept	12+ oz.
9800-63	coloratum	298987	Rhodes	W T P	MA E 1/	MA B C		Jul/Sept	72-60x25	Sept/Oct	18 gm.
13101-61	coloratum	284152	Austral	W T P	F E	A B C		Jul/Sept	66-48x28	Aug/Oct	3 gm.
15359-63	coloratum	298988	Rhodes	W T P	MA P *	MA D		Jul/Sept	40-36x120	Sept/Oct	Trace
15360-63	coloratum	298989	S.Rhod	W T P	A P *	MA D		Jul/Sept	36-30x132	Oct	107 gm.
15479-64	deustum	299040	S.Rhod	W T P	F E	F B C	C	May/Jul*	45-32x14	May/Sept	Trace
15371-63	meyerianum	299000	Rhodes	W T P	MA S P *	MA D		Sept	38-36x144	Sept/Oct	Trace

LEGEND FOR GRASS PLANTINGS

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LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic
BLOOM DATE: *-Greenhouse
MATURE SIZE: Head height-Leaf Height x spread (inches)
SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1965 Grass Plantings - Beltsville, Md.

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	PANICUM										
13816-62	miliaceum	289320	Hungary	A	F E	F B C	S	July	12-8x11	August	5 gm.
13817-62	miliaceum	289321	Hungary	A	F E	F B C	S	July	18-13x6	Jul/Aug	2 gm.
13818-62	miliaceum	289322	Hungary	A	F E	F B C	S	July	23-15x13	Jul/Aug	34 gm.
13819-62	miliaceum	289323	Hungary	A	MA E	F B C	S	July	16-9x8	Jul/Aug	46 gm.
13820-62	miliaceum	289324	Hungary	A	F E	F B C	S	July	16-8x6	July	11 gm.
13821-62	miliaceum	289325	Hungary	A	F E	F B C	S	Jul/Aug	8-6x6	August	Trace
13823-62	miliaceum	289327	Hungary	A	MA E	F B C	S	July	20-12x10	Jul/Aug	63 gm.
13824-62	miliaceum	289328	Hungary		Died before heading						
13825-62	miliaceum	289329	Hungary	A	F E	F B C	S	July	18-8x8	Jul/Aug	Trace
13826-62	miliaceum	289330	Hungary	A	F E	F B C	S	July	24-17x10	Jul/Aug	92 gm.
13827-62	miliaceum	289331	Hungary	A	MA E	F B C	S	Jul/Aug	20-15x12	Jul/Aug	11 gm.
13828-62	miliaceum	289332	Hungary	A	MA E	F B C	S	Jun/Jul	23-14x14	Jul/Aug	102 gm.
13829-62	miliaceum	289333	Hungary	A	F E	F B C	S	Jul/Aug	24-16x10	Jul/Aug	31 gm.
13830-62	miliaceum	289334	Hungary	A	F E	F B C	S	July	25-18x10	Jul/Aug	66 gm.
13831-62	miliaceum	289335	Hungary	A	F E	F B C	S	July	15-9x6	Jul/Aug	7 gm.
13832-62	miliaceum	289336	Hungary	A	F E	F B C	S	July	19-11x11	Jul/Aug	12 gm.
13833-62	miliaceum	289337	Hungary	A	F E	F B C	S	July	-16x6	Jul/Aug	Trace
13989-62	miliaceum	290726	England	A	F E	F B C	S	Jul/Aug	24-13x7	Jul/Aug	38 gm.
	PAPPOPHORUM										
13120-61	mucronulatum	284169	Argent	W H P	MA E	F B C	S	Jun/Aug	17-8x9	Jun/Aug	6 oz.
	PENNISETUM										
15887-65	purpureum	304188	S.Rhod.	W T P?	F E 1/	F D	'Cameroons'		*		
15888-65	purpureum	304189	S.Rhod.	W T P?	F E 1/	F D	'Doria Bay'		*		
15889-65	purpureum	304190	S.Rhod.	W T P?	F E 1/	MA D	'Gold Coast'		*		
15890-65	purpureum	304191	S.Rhod.	W T P?	MA E 1/	MA D	'Mazabuka'		*	Jun/Nov	Trace
15891-65	purpureum	304192	S.Rhod.	W T P?	F E 1/	A D	'Pungwe'		*		
15892-65	purpureum	304193	S.Rhod.	W T P?	F E 1/	MA D	'Urukwanu'		*		
	PHALARIS										
13908-62	sp.	289670	Spain		Winter killed						
	PHLEUM										
13195-61	pratense	284244	Czecho	C H P	A E	A B C	C	Jun/Jul	38-30x14	July	6½ oz.
13196-61	pratense	284245	Poland	C H P	MA E	MA B C	C	Jun/Jul	36-24x18	July	94 gm.
13197-61	pratense	284246	Yugosl	C H P	MA E	MA B C	C	June	34-34x12	July	3 gm.

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RHIZOMATOUS: 1/

1965 Grass Plantings - Beltsville, Md.

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	PHLEUM										
13198-61	pratense	284247	Yugosl	C H P	MA E	MA B C	C	June	32-26x10	July	9 gm.
15278-64	pratense	237191	Netherl	C H P	F E	MA B	C	July	15-6x16	Aug/Sept	Trace
15304-64	pratense	G-87775-S	NE-9 sel	C H P	F E	MA B	C	Sept	24-8x15	Nov.	no fill
	POA										
13203-61	compressa	284252	Poland	C H P	MA E 1/	F B C		Jun/Jul	16-7x14	July	56 gm.
13204-61	compressa	284253	Germany	C H P	A E 1/	MA B C		Jun/Jul	18-14x10	July	24 gm.
12924-61	marginata	283958	USSR	C H P	F E	F B C		May/Jun	20-16x8	June	Trace
13990-62	nemoralis	290727	England	C H P	A E 1/	F B C		June	26-12x20	July	4 gm.
15071-63	nemoralis	297365	Norway		Died without heading						
12925-61	pratensis	283959	Germany	C H P	A E 1/	MA B C		May/Jun	19-19x12	June	66 gm.
12926-61	pratensis	283960	Poland	C H P	MA E 1/	MA B C		May/Jun	19-8x24	June	11 gm.
12927-61	pratensis	283961	Turkey	C H P	F E 1/	F B C		May/Jun	25-8x3	June	2 gm.
13881-62	pratensis	289643	Spain	C H P	F E	F B		May	21-5x5	June	Trace
	SECALE										
13991-62	montanum	290728	England	C P	Died without heading						
	SETARIA										
13634-62	chondrachne	286487	Japan	W H P	A E 1/	A D		Sept	--36x30	Not collected	
13971-62	italica	290456	Hungary	A	F E	F B C	S	Aug	40-28x8	Aug/Sept	12 gm.
13972-62	italica	290457	Hungary	A	F E	F B C	S	Jul/Aug	42-25x10	Jul/Sept	121 gm.
13973-62	italica	290458	Hungary	A	F E	MA B C	S	Jul/Aug	36-27x9	Aug	17 oz.
13974-62	italica	290459	Hungary	A	F E	F B C	S	Jul/Aug	40-30x8	Aug	298 gm.
13975-62	italica	290460	Hungary	A	F E	F B C	S	Jul/Aug	36-30x8	Aug/Sept	237 gm.
13796-62	italica	290461	Hungary	A	A E	A B C	S	Jul/Sept	36-31x16	Jul/Sept	27 oz.
13977-62	italica	290462	Hungary	A	MA E	A B C	S	Jul/Sept	33-23x10	Aug/Sept	308 gm
13978-62	italica	290463	Hungary	A	F E	MA B C	S	Jul/Sept	34-30x9	Aug/Sept	14 oz.
13979-62	italica	290464	Hungary	A	MA E	MA B C	S	Jul/Aug	40-30x11	Aug	15 oz.
13980-62	italica	290465	Hungary	A	A E	A B C	S	Jul/Sept	28-19x9	Aug/Sept	16 oz.
13981-62	italica	290466	Hungary	A	A E	A B C	S	Jul/Sept	33-25x10	Jul/Sept	16 oz.
15375-63	phanerococca	299072	Rhodes	A	MA E	MA B C	S	Aug/Sept	60-36x12	Sept/Oct	5 gm.
15480-63	phanerococca	299044	Rhodes	A	F E	A B C	S	Jun/July	42-18x28	Jun/Sept	5 gm.

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	AGROPYRON										
15127-63	caninum	297868	Rumania	C H P	A E 1/	MA B		June	26-13x12	July	130 gm
15128-63	cristatum	297869	Sweden	C H P	A E 1/	MA B C	C	May/Jun	19-15x11	July	12 oz
15129-63	cristatum	297870	Rumania	C H P	A E 1/	A B C	C	June	18-14x13	July	6 oz
15130-63	elongatum	297871	Argent	C H P	A E	A B C	C	July	58-24x18	Aug	6 oz
15131-63	intermedium*	297872	USSR	C H P	MA E 1/	F B C	C	June	35-15x10	July	105 gm
14477-63	junceum	292580	Israel	C H P	MA E 1/	MA B		July	28-12x6	Oct	4 gm
14478-63	junceum	292581	Israel	C H P	MA E 1/	F B		July	28-12x6	Aug	trace
15132-63	junceum	297873	Portu	C H P	MA E 1/	MA B C		June	18-13x24	July	65 gm
15133-63	pectiniforme*	297874	USSR	C H P	MA E	MA B C		June	22-14x10	July	2 gm
15134-63	scabrifolium	297875	S. Amer	C H P	A E 1/	MA B C	C	July	46-28x17	July	3# 1 oz
15135-63	trichophorum	297876	USSR	C H P	MA E	F B C	S+C	June	32-18x11	July	3 gm
	AGROSTIS										
15452-64	eriantha	299460	S. Afr	C H P	A E 1/	F B		Jun/Jul	24-10x13	Jul/Aug	3 gm
15036-63	tenuis	297330	Norway	C H P	MA E 1/	MA B	Apom + C	July	13-7x10	Aug	no fill
	ALOPECURUS										
15037-63	arundinaceus	297331	Norway	C H P	MA E	MA B		May	26-12x8	June	no fill
14761-64	pratensis	-	BN-11188 X BN-11198	C H P	A E	MA B C	C	May	23-18x11	June	41 gm
	ANDROPOGON										
16223-65	cf microstachyus (syn. condensatus)	312904	Colombia	W T P	F E	MA B C	S	Dec/Feb*	38-24x6	Jan/Feb*	trace
	ANTHOXANTHUM										
15618-64	odoratum	306726	Greece	C H P	MA E	MA B		May/Jun	10-5x8	June	trace
15619-64	odoratum	306727	Greece	C H P	A E	MA B		May	11-5x4	June	trace
	BROMUS										
14600-62	erectus	292849	Germany	C H P	A E	MA B C	C	May/Jun	30-15x11	June	1 #
15279-63	erectus	251806	Italy	C H P	A E	MA B	C	May/Jun	30-12x14	June	2 # 9 oz
14601-62	inermis	292850	Germany	C H P	A E 1/	A B C	C	May/Jun	36-24x18	July	5½ oz
15288-63	ramosus	240152	Morocco	C H P	A E	A B C		June	38-15x14	June	2# 4 oz
15145-63	riparius	297887	USSR	C H P	A E	A B C		May/Jun	32-19x14	June	1# 12 oz
15146-63	riparius	297888	USSR	C H P	A E	A B C		June	40-26x20	June	2# 11 oz
15147-63	riparius	297889	USSR	C H P	A E	A B C		June	40-23x14	June	3# 7 oz
12519-61	tomentellus	283200	Italy	C H P	F E	F B		May	15-7x9	June	35 gm
13065-61	willdenowii	284108	Chile	C A	F E	MA B	Cleist-S	June	13-7x9	Jun/Jul	1 gm

*Identification pending.

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	CENCHRUS										
16001-64	ciliaris	299514	S.Afr	W T P	MA E	A C	Apom.	Jul/Sept	48-34x22	Jul/Sept	138 gm
16004-64	ciliaris	299517	S.Afr	W T P	MA E	A C	Apom.	Jul/Sept	32-24x32	Jul/Sept	22 gm
16006-64	ciliaris	299519	S.Afr	W T P	MA E	MA C	Apom.	Jul/Sept	36-22x20	Jul/Sept	2½ oz
16007-64	ciliaris	299520	S.Afr	W T P	A E	MA C	Apom.	Jun/Sept	36-24x33	Aug/Sept	33 gm
16009-64	ciliaris	299522	S.Afr	W T P	A E	A C	Apom.	Jul/Sept	40-25x36	Jul/Sept	30 gm
16010-64	ciliaris	299523	S.Afr	W T P	MA E	MA B C	Apom.	Jul/Oct	42-26x26	Jul/Sept	3 oz
16011-64	ciliaris	299524	S.Afr	W T P	MA E	A C	Apom.	Jul/Aug	42-30x29	Jul/Sept	78 gm
16012-64	ciliaris	299525	S.Afr	W T P	F E	MA C	Apom.	Jul/Sept	36-24x24	Jul/Sept	3¼ oz
16013-64	ciliaris	299526	S.Afr	W T P	MA E	MA B C	Apom.	Jul/Aug	40-26x23	Jul/Sept	20 gm
16014-64	ciliaris	299527	S.Afr	W T P	MA E	A C	Apom.	Jul/Sept	48-38x30	Jul/Sept	4½ oz
16015-64	ciliaris	299528	S.Afr	W T P	MA E	A C	Apom.	Jul/Oct	48-34x24	Jul/Sept	4½ oz
16018-64	ciliaris	299532	S.Afr	W T P	MA E	A C	Apom.	Jul/Sept	48-40x40	Jul/Oct	14 oz
16019-64	ciliaris	299533	S.Afr	W T P	MA E	A C	Apom.	Jul/Sept	46-36x30	Jul/Sept	6-3/4 oz
16020-64	ciliaris	299534	S.Afr	W T P	MA E	MA B C	Apom.	Jul/Aug	40-24x21	Jul/Sept	10½ oz
16021-64	ciliaris	299535	S.Afr	W T P	F E	A C	Apom.	Jul/Sept	52-36x27	Jul/Sept	6½ oz
16022-64	ciliaris	299536	S.Afr	W T P	A E	A C	Apom.	Jun/Sept	44-32x24	Jul/Sept	13 oz
16023-64	ciliaris	299537	S.Afr	W T P	MA E	A C	Apom.	Jul/Sept	48-34x24	Jul/Sept	3½ oz
16024-64	ciliaris	299538	S.Afr	W T P	MA E	A C	Apom.	Jul/Aug	34-24x20	Jul/Oct	18½ oz
16025-64	ciliaris	299539	S.Afr	W T P	A E	A C	Apom.	Jul/Sept	42-30x26	Jul/Oct	13 oz
16026-64	ciliaris	299540	S.Afr	W T P	A E	A C	Apom.	Jun/Sept	42-26x21	Jul/Sept	14½ oz
16027-64	ciliaris	299541	S.Afr	W T P	MA E	A C	Apom.	Jun/Sept	44-28x21	Jul/Sept	12½ oz
16028-64	ciliaris	299542	S.Afr	W T P	MA E	A B C	Apom.	Jun/Sept	30-24x24	Jul/Sept	10½ oz
16029-64	ciliaris	299543	S.Afr	W T P	MA E	A C	Apom.	Jun/Oct	42-30x24	Jul/Oct	8 oz
16030-64	ciliaris	299544	S.Afr	W T P	MA E	MA C	Apom.	Jun/Sept	mixed	Jul/Sept	13 oz
16031-64	ciliaris	299545	S.Afr	W T P	A E	A C	Apom.	Jul/Sept	46-34x28	Jul/Sept	10 oz
16032-64	ciliaris	299546	S.Afr	W T P	MA E	A B C	Apom.	Jul/Sept	46-30x27	Jul/Sept	9 oz
10458-58	echinatus	257689	Austral	W A	MA E*	A B		Jun/Jul	30-22x24	July	4 oz
	CHLORIS										
16033-64	gayana	299547	S.Afr	W T P	MA E *	A B C	Apom/C	Jul/Sept	46-30x50	Sept	32 gm
16034-64	gayana	299548	S.Afr	W T P	MA E *	A B	Apom/C	Jul/Aug	36-15x60	Sept	44 gm
16035-64	gayana	299549	S.Afr	W T P	F E *	MA B C	Apom/C	Jul/Aug	36-16x60	Jul/Sept	55 gm
16036-64	gayana	299550	S.Afr	W T P	MA E *	MA B	Apom/C	Jul/Sept	32-12x72	Sept	7 gm
16037-64	gayana	299552	S.Afr	W T P	MA E *	A B C	Apom/C	Jul/Sept	30-20x30	Jul/Sept	105 gm

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	CHLORIS										
16039-64	gayana	299554	S.Afr	W T P	A E *	A B	Apom/C	Jul/Sept	42-20x52	Sept	92 gm
16041-64	gayana	299556	S.Afr	W T P	MA E *	A B C	Apom/C	Jul/Aug	36-23x60	Jul/Aug	10 gm
	DACTYLIS										
13773-62	glomerata	288998	Hungary	C H P	MA	A B C	C	June	34-22x18	Jun/Jul	98 gm
15621-64	glomerata	306729	Greece	C H P	F E	F B	C	June	13-4x7	July	trace
	DACTYLOCTENIUM										
16042-64	australe	299588	S.Afr	W T P	A E *	A D		Sept/Oct	10-5x63	Dec/Jan*	
	DIGITARIA										
14902-63	smutsii	296569	S.Afr	W T P	MA E	A B C	C	July/Oct	48-20x18	Aug/Sept	12 gm
16214-65	violescens	312905	Ecuador	W A	MA S&P	F B C	S	Oct/Nov*	12-5x24	Nov/Dec*	15 gm
	ECHINOCHLOA										
14490-63	colonum	292598	Israel	W A	A E	A B	S	Jun/Oct	7-2x18	Jun/Aug	4 gm
16044-64	holubii	299897	S.Afr	W T P	MA E 1/	F C	S	Jul/Aug	42-26x18	Aug/Sept	trace
	ELYMUS *										
15154-63	andinus	297896	S.Amer	C H P	MA E	A B C		June	20-15x12	July	75 gm
15050-63	arenarius	297344	Norway	C H P	F E 1/	MA B	S	June	24-7x16	July	trace
15051-63	arenarius	297345	Norway	C H P	F E 1/	MA B	S	June	44-24x15	July	20 gm
15156-63	patagonicus	297898	Argent	C H P	F E	F B C		June	35-13x11	June	38 gm
15157-63	villosus	297899	Germany	W H P	A E	A B C		Jul/Aug			
	ENTEROPOGON										
16046-64	simplex	299905	S.Afr	W T P	F E	A B C		Jul/Sept	24-13x8	Jul/Sept	4 gm
	ERAGROSTIS										
15478-64	atherstonei	299038	S.Rhod	W T P	A E&S	F B C		Jun/Aug	30-15x24	Aug/Sept	53 gm
16047-64	atherstonei	299906	S.Afr	W T P	A E	A B C		Jun/Sept	36-24x24	Aug/Oct	62 gm
16048-64	bicolor	299907	S.Afr	W T P	F E	F B		Jun/Sept	21-5x6	Jul/Aug	trace
16049-64	chloromelas	299910	S.Afr	W T P	F E	MA B	S	Jun/Oct	34-12x10	Aug	5 gm
16050-64	chloromelas	299911	S.Afr	W T P	F E	MA B	S	Jul/Oct	32-12x12	Aug	3 gm
5107-63	curvula	298985	Rhod	W H P	A E	A B C	S	June	46-24x24	July	17¼ oz
5108-63	curvula	298986	Rhod	W T P	MA E	F B C	S	Jun/Aug	50-16x17	Aug/Oct	104 gm
15504-64	curvula	299914	Natal	W T P	MA E	MA B C	S	Jul/Aug	48-18x30	Sept	17 gm
16076-64	obtusa	299944	S.Afr	W T P	MA E	MA B		Jun/Oct	19-6x6	Jul/Sept	54 gm
16077-64	obtusa	299945	S.Afr	W T P	A E	MA B C		Jun/Aug	21-12x12	Jul/Sept	53 gm
16078-64	obtusa	299947	S.Afr	W T P	MA E	F B		Jun/Aug	12-6x9	Jul/Sept	50 gm

*Identification pending.

LEGEND FOR GRASS PLANTINGS

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LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic
BLOOM DATE: *-Greenhouse
MATURE SIZE: Head height-Leaf height x Spread (inches)
SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1966 Grass Plantings - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	ERAGROSTIS										
16079-64	superba	299951	S.Afr	W T P	F E	F B C		Jun/Sept	24-20x20	Jul/Oct	11 oz flor.
16080-64	superba	299952	S.Afr	W T P	MA E	F B C		Jun/Sept	24-17x19	Jul/Oct	21 gm cary.
16081-64	superba	299953	S.Afr	W T P	MA E	MA B C		Jun/Sept	34-18x20	Jul/Oct	1# 5 oz fl.
16082-64	superba	299954	S.Afr	W T P	MA E&S	MA B		Jun/Sept	28-14x18	Jul/Oct	18 oz flor.
16083-64	superba	299955	S.Afr	W T P	MA E	MA B		Jun/Sept	36-15x18	Jul/Oct	1# 3 oz fl.
16084-64	superba	299956	S.Afr.	W T P	MA E	A B C		Jun/Sept	37-20x24	Jul/Oct	125 gm cary
16085-64	superba	299957	S.Afr	W T P	MA E	MA B C		Jun/Sept	30-18x22	Jul/Oct	1# 5 oz fl.
16086-64	superba	299958	S.Afr	W T P	MA E	MA B C		Jun/Sept	26-16x20	Jul/Oct	97 gm cary
16087-64	superba	299959	S.Afr	W T P	MA E	MA B C		Jun/Sept	36-18x22	Jul/Oct	14 oz flor.
16088-64	superba	299960	S.Afr	W T P	MA E	MA B C		Jul/Sept	36-18x20	Jul/Oct	83 gm cary
16089-64	superba	299961	S.Afr	W T P	MA E	MA B C		Jul/Sept	36-20x20	Jul/Oct	1# 11 oz Fl
15863-64	sp.*	-	Tunisia	W A	MA E	F B C		May/Sept	18-5x6	Jul/Oct	32 gm
16090-64	sp*	299963	S.Afr	W A	MA E	MA B C		Jul/Aug	22-10x11	Sept	30 gm
	FESTUCA										
14494-62	arundinacea	292602	Israel	C H P	MA E	A B C	C	May/Jun	40-23x15	June	200 gm
14495-62	arundinacea	292603	Israel	C H P	MA E	A B C	C	June	37-17x13	June	240 gm
14496-62	arundinacea	292604	Israel	C H P	MA E	MA B	C	June	33-12x10	June	
15289-63	rubra	200321-S	NE-9	C H P	A E	MA B C	C	June	22-16x12	June	45 gm
	HORDEUM										
13718-62	bulbosum	287840	Spain	C H P	A E	A B	C	June	35-15x16	July	260 gm fl.
15623-64	bulbosum	306731	Greece	C H P	A E	MA B	C	June	36-12x13	June	no fill
	LOLIUM										
15538-63	temulentum	302664	India	C A	MA E	MA B C	S	June	24-12x4	July	78 gm
	MISCANTHUS										
13631-62	sinensis	286483	Japan	W H P	F E	MA B		Oct	38-32x20	-	-
	PANICUM										
16101-64	antidotale	300034	Argent	W T P	F E	MA B C	S	Jul/Oct	48-33x15	Aug/Oct	41 gm
16102-64	coloratum	300039	S.Afr	W T P	MA E	MA B C		Jun/Oct	30-19x15	Jul/Aug	114 gm
16103-64	coloratum	300041	S.Afr	W T P	MA E	MA B		Jul/Aug	36-27x36	Jul/Sept	102 gm
16109-64	maximum	300052	S.Afr	W T P	A E	A C	Apom	Jul/Sept	68-48x42	Jul/Sept	17 oz
16110-64	maximum	300053	S.Afr	W T P	MA E	A B C	Apom	Jul/Sept	66-36x36	Jul/Sept	132 gm
16111-64	maximum	300054	S.Afr	W T P	F B	MA B	Apom	Jul/Sept	46-17x24	Jul/Sept	43 gm
16113-64	maximum	300056	S.Afr	W T P	MA E	MA B C	Apom	Jul/Aug	72-36x40	Jul/Sept	11 gm
16114-64	maximum	300057	S.Afr	W T P	MA E	A C	Apom	Jul/Sept	46-40x38	Jul/Sept	70 gm

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1966 Grass Plantings - Beltsville, Md.

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	PANICUM										
16115-64	stapfianum	300058	S.Afr	W T P	A E	MA C		Jun/Aug	38-20x20	Jul/Aug	60 gm
16116-64	stapfianum	300059	S.Afr	W T P	MA C	MA C		Jul/Aug	46-27x30	Jul/Sept	30 gm
	PENNISETUM										
14425-62	asperifolium	292455	Israel	W T P	A E	F B C	C	Jun/Aug	40-24x30	Jul/Oct	4 gm flor.
16134-64	macrourum	300084	S.Afr	W T P	F E	MA B	S	Jul/Sept	44-18x22	Sept/Oct	trace
	PHALARIS										
13575-62	aquatica X arundinacea	-	BN sel	C H P	A E	MA B C	C	June	44-21x15	July	82 gm
15068-64	arundinacea	297362	Norway	C H P	--1/	A B	C	-	---15x24	-	-
13133-61	canariensis	284182	Morocco	C A	F E	F B C	C	June	22-13x3	June	18 gm
15672-64	coerulescens	306758	Greece	C H P	MA E	F B C	C	June	28-12x10	June	trace
	POA										
15069-63	compressa	297363	Norway	C H P	MA E 1/	F B C	Apom & C	June	10-6x24	July	20 gm
15296-63	compressa	204485	Turkey	C H P	A E 1/	MA C	Apom & C	June	11-6x18	July	3 gm
14609-62	nemoralis	292858	Germany	C H P	MA E	F B	C	June	19-8x6	June	10 gm
15070-63	nemoralis	297364	Norway	C H P	A E	F B C	C	June	21-8x7	June	60 gm
15297-63	pratensis	251278	Iran	C H P	F E 1/	MA B	Apom	May	17-5x10	June	2 gm
15298-63	pratensis	255890	Poland	C H P	MA E 1/	MA B C	Apom	May	19-8x11	June	3 gm
15299-63	pratensis	258785	USSR	C H P	MA E 1/	F B C	Apom	May	24-8x11	June	1 gm
15300-63	pratensis	258786	USSR	C H P	A E 1/	MA B	Apom	May	26-6x33	June	55 gm
15301-63	pratensis	274646	Poland	C H P	MA E 1/	F B	Apom	May	24-7x15	June	trace
	SECALE										
15220-63	montanum	297962	Sweden	C H P	A E	MA B C		June	44-12x18	July	80 gm
15221-63	montanum	297963	Germany	Winter-killed		F B		-	---6x10	-	-
15222-63	montanum	297964	Germany	Winter-killed		F B		-	---4x16	-	-
	SETARIA										
15509-64	flabellata	300109	S.Afr	W T P	F E 1/	MA B		Sept/Oct	30-14x9	Oct	trace
15510-64	neglecta	300110	S.Afr	W T P	MA E 1/	A B		Jul/Sept	36-14x9	Jul/Sept	8 gm
15514-64	sp.*	300114	S.Afr	W T P	A E	A B		Jul/Sept	36-18x9	Aug/Sept	36 gm
17107-65	sp*	-	Del.	W A	F E	F B		Jul/Sept	60-24x10	Aug/Oct	52 gm
	SORGHASTRUM										
14739-63	nutans	-	Ill.	W H P	MA E 1/	A B	C	Sept/Oct	53-26x15	Oct	7 gm
	SPOROBOLUS										
15516-64	fimbriatus	300123	S.Afr	W T P	MA E 1/	MA B		Jul/Aug	36-13x8	Aug/Sept	135 gm fl.

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POLLINATION: S-Self; C-Cross; A-Apomictic
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RHIZOMATOUS: 1/

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	TETRACHNE										
15519-64	dregei	300136	S.Afr	W H P	MA E	A B		July	44-22x14	July/Aug	18 gm
15520-64	dregei	300137	S.Afr	W H P	MA E	A B		July	37=14x16	July/Aug	6 gm
	TETRAPOGON										
16140	mossambicensis	300139	S.Afr	W T P	A E *	MA B	S	Jul/Aug	26-11x17	Jul/Sept	14 gm fl.
	UROCHLOA										
17383-66	mosambicensis	314886	S.Afr	W T P	A E *	A B C		Jun/Sept*	34-22x72	Jul/Sept*	160 gm fl.

The following accessions, received as vegetative material, were collected in Central and South America by Dr. W. T. Atkinson, Department of Agriculture, Sidney, N.S.W., Australia.

	DACTYLIS										
16213-65	glomerata	-		C H P	MA E	MA B C	C	May/Jun	28-13x9	Jun/Jul	8 gm
16215-65	glomerata	-		C H P	F E	F B C	C	May/Jun	25-9x11	Jun/Jul	trace
16216-65	glomerata	-		C H P	F E	MA B C	C	May/Jun	24-12x12	Jun/Jul	8 gm
16217-65	glomerata	-		C H P	F E	MA B C	C	May/Jun	22-10x10	Jun/Jul	1 gm
16218-65	glomerata	-		C H P	F E	F B C	C	May/Jun	24-8x7	Jun/Jul	6 gm
16219-65	glomerata	-		C H P	F E	F B C	C	May/Jun	23-10x9	Jun/Jul	2 gm
16220-65	glomerata	-		C H P	F E	F B C	C	May/Jun	24-10x13	July	4 gm
16221-65	glomerata	-		C H P	MA E	MA B C	C	May/Jun	23-9x8	Jun/Jul	trace
16222-65	glomerata	-		C H P	F E	F B C	C	May/Jun	26-10x5	Jun/Jul	trace
16224-65	glomerata	-		C H P	F E	F B C	C	May/Jun	21-8x7	June	trace
16225-65	glomerata	-		C H P	F E	F B C	C	May/Jun	20-9x6	Jun/Jul	2 gm

LEGEND FOR LEGUME AND OTHER PLANTINGS

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POLLINATION: S-Self; C-Cross; A-Apomictic; Cleis.-Cleistogamous
BLOOM DATE: *-Greenhouse
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RHIZOMATOUS: 1/

1965 Plantings - Legume and Other - Beltsville, Md.

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	ADESMIA										
13507-61	angustifolia	285103	Chile	A	M A P	F D	S	Mar/May*	5x48	Apr/May	5 gm.
13508-61	angustifolia	285104	Chile	A	A S P	A D	S	Mar/Apr*	5x27	Apr/May	6 gm.
13509-61	angustifolia	285105	Chile	A	F P	F D	S	Apr*	4x48	Apr/May	12 gm.
13510-61	bicolor	285106	Chile	W H P	F P *	MA D	S	May/Jun*	2x84	July	Trace
13511-61	filifolia	285107	Chile	A	A S	F D	S	Mar/Apr*	10x30	Mar/Apr	-
13512-61	incana	285108	Chile	W T P	F P *	F D	C	Apr/Aug*	2x120	Jun/Aug	Trace
13513-61	microphylla	285109	Chile	W T P	F S	F D	C	Apr/May*	7x12	did not set	seed
13514-61	muricata	285110	Chile	A	MA S	MA D	S	Mar/May*	11x36	Apr/Jun	29 gm.
13515-61	reclinata	285111	Chile	W T P	F S	F D	C	Apr/Jun*	8x60	did not set	seed
13516-61	tenella	285112	Chile	A	A S	A D	S	Mar/Apr*	6x33	Apr/May	7 gm.
13517-61	tenella	285113	Chile	A	A P	A D	S	Mar*	3x40	Mar/Apr	28 gm.
13518-61	tenella	285114	Chile	A	F P	MA D	S	Mar/Apr*	3x46	Mar/May	12 gm.
	ANTHYLLIS										
15138-63	rubicunda	297879	Germany		Died in field without bloom						
14597-62	tetraphylla	292846	Germany	A	F P	F D	S	May/Sept	3x14	Jun/Sept	48 gm.
15137-63	tetraphylla	297878	Israel	A	F S	F D	S	Apr/May*	10x18	May/Jun	75 gm.
14535-62	vulneraria ssp. maritima	292782	Sweden	H P	F P	F D	S?	Jun/July	6-3x12	Aug	-
	ARGYROLOBIUM										
14360-62	uniflorum	292384	Israel	W T P	F S	F D	Cleist.	Jun/Aug	6x11	Jul/Sept	15 gm.
	ASTRAGALUS										
14540-62	cicer	292787	Sweden	C H P	F S 1/	F D		none	8x15	-	-
14541-62	falcatus	292788	Sweden	C H P	F E 1/	F D		May/Jun	12x18	June	Trace
	CLITORIA										
15317-64	rubiginosa	298605	Taiwan	W T P	F P	F D		none	12x48	-	-
	CROTALARIA										
7542-50	sp.	192957	Ethiopia	W T P	F E	F D	C	Jun/Aug	14x6	did not set	seed
	DESMODIUM										
10420-58	perplexum	'Clanton'	Ala.	W H P	F E	A D		Sept	42x48	frost	
15392-62	purpureum	299090	India	W T P	F E	MA D		Jun/Aug	48x30	Jul/Oct	65 gm.
13626-62	racemosum	286475	Japan	W T P	F E	MA D	S?	Sept*	24x17	Oct/Nov	5 gm
	DORYCNOPSIS										
13888-62	gerardii	289650	Spain	W H P	A P	MA D	C?	Jun/Aug	4x66	Jul/Aug	-
	ERIOSEMA										
7734-51	parviflorum	199333	Kenya	W T P	MA S P	F D	S	May/Jun*	5x20	Jun/Jul	Trace

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1965 Plantings - Legume and Other - Beltsville, Md.

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	HEYLANDIA										
6825-49	latebrosa	189494	India	A	F P	F D	C?	Apr/Jun*	1x10	did not set seed	
	HIPPOCREPIS										
13711-62	bourgaei	287833	Spain	W T P?	F P	F D	Died without bloom				
13713-62	glauca	287835	Spain	W T P	F P	F D	Died without bloom				
13714-62	glauca	287836	Spain	W T P	F P	F D	Died without bloom				
13895-62	sp.	298657	Spain		F P	F D	Died without bloom				
	LOTONONIS										
15403-61	bainesii	299104	S. Afr	W T P	MA P *	F D	Cleist	Jul/Sept	3x72	Sept/Oct	Trace
	LOTUS										
13540-61	corniculatus	285278	USSR	H P	MA S	MA D	C	May/Aug	9x27	Jun/Sept	6 gm.
13541-61	corniculatus	285279	USSR	H P	MA S	MA D	C	May/Aug	14x30	Jun/Sept	21 gm.
13542-61	corniculatus	285280	USSR	H P	MA S	MA D	C	May/Aug	10x36	Jun/Sept	11 gm.
13543-61	corniculatus	285281	USSR	H P	MA S	A D	C	May/Aug	14x32	Jun/Sept	7 gm.
13544-61	corniculatus	285282	USSR	H P	MA S	MA D	C	May/Aug	8x32	Jun/Sept	28 gm.
13545-61	corniculatus	285283	USSR	H P	MA S	A D	C	May/Aug	16x40	Sept	16 gm.
13546-61	corniculatus	285284	USSR	H P	MA S	MA D	C	May/Aug	8x28	Jun/Sept	4 gm.
13547-61	corniculatus	285285	USSR	H P	F S	F D	C	May/Aug	16x30	Jun/Sept	4 gm.
13619-62	corniculatus	286468	Japan	H P	F P	F D	C	May/Aug	6x18	Jun/Sept	4 gm.
13620-62	corniculatus	286469	Japan	H P	F P	F D	C	May/Aug	5x24	Jun/Sept	8 gm.
13934-62	corniculatus	290375	Hungary	H P	MA S	A D	C	May/Aug	12x30	Jun/Sept	9 gm.
13935-62	corniculatus	290376	Hungary	H P	MA S	MA D	C	May/Aug	12x34	Jun/Sept	6 gm.
14377-62	creticus	292407	Israel	T P	MA S	F D	C	May/Jun*	16x72	Jun/July	Trace
13467-61	mearnsii	284761	Kenya	H P	MA P	MA D		May/Jul	4x16	May/Jul	64 gm.
14378-62	palustris	292408	Israel	T P	MA P 1/	A D	C	Jun/Sept	3x26	Sept/Oct	5 gm.
14379-62	tenuifolius	292409	Israel	T P	MA P	F D		Jun/Sept	2x12	Jun/Oct	4 gm.
	LUPINUS										
14384-64	pilosus	292414	Israel	A	F E	MA D	S	Apr/May*	28x13	June	120 gm.
	MEDICAGO										
12232-57	littoralis	226647	Iran	A	MA P	F D	S	Feb/Mar*	2x15	Apr/May	3-3/4 oz.
14387-62	marina	292417	Israel	T P	F S	F D		May*	6x16	May/Jul	-1 gm.
12237-57	minima	227032	Iran	A	A P	F D	S	Feb/Mar*	2x16	Mar/Apr	16 gm.
12238-57	murex	227025	Iran	A	MA P	F D	S	Feb/Mar*	2x50	Mar/May	3½ oz.
12170-60	orbicularis	227030	Iran	A	A P	A D	S	Feb/Mar*	2x20	Apr/Jun	3¼ oz.
14389-62	orbicularis	212419	Israel	A	A S P	A D	S	Feb/Mar*	4x34	Apr/Jun	61 gm.

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RHIZOMATOUS: 1/

1965 Plantings - Legume and Other - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	MEDICAGO										
14390-62	orbicularis	292420	Israel	A	MA P	MA D	S	Feb/Mar*	3x30	Mar/May	72 gm.
14391-62	orbicularis	292421	Israel	A	F P	F D	S	Mar/Apr*	3x52	Mar/Jun	83 gm.
14392-62	orbicularis	292422	Israel	A	A S P	A D	S	Mar/Apr*	5x30	Feb/Jun	8½ oz.
12194-61	polymorpha v. vulgaris	226469	Iran	A	MA P	MA D	S	Feb/Mar*	2x37	Mar/May	4½ oz.
12241-60	polymorpha v. vulgaris	229766	Iran	A	A P	A D	S	Mar/Apr*	4x48	Apr/May	4½ oz.
13899-62	sativa	289661	Spain	H P	F E 1/	F D	S	Jun/Sept	12x12	July/Sept	Trace
13900-62	sativa	289662	Spain	H P	MA S 1/	MA D	S	Jun/Sept	12x30	July/Sept	2 gm.
15316-64	sativa	206453	Turkey	H P	MA S 1/	MA D	S	Jun/Aug	12x48	July/Aug	Trace
13073-61	scutellata	284122	Italy	A	MA P	MA D	S	Mar/Apr*	3x38	Apr/Jun	5 oz.
13938-62	scutellata	290379	Hungary	A	MA P	A D	S	Feb/Mar*	5x40	Mar/May	7 oz.
14402-62	scutellata	292432	Israel	A	MA S	A D	S	Feb/Mar*	6x48	Mar/Jun	6 oz.
14403-62	scutellata	292433	Israel	A	MA S	A D	S	Feb/Mar*	5x30	Apr/Jun	10 oz.
13725-62	tribuloides	287888	Spain	A	MA P	A D	S	Mar/May*	7x60	Apr/Jun	5 oz.
14404-62	tribuloides	292434	Israel	A	MA P	MA D	S	Feb/Mar*	6x28	Mar/May	4 oz.
14405-62	tribuloides	292435	Israel	A	MA P	MA D	S	Feb/Mar*	3x48	Mar/May	3 oz.
14406-62	tribuloides	292436	Israel	A	MA P	MA D	S	Feb/Mar*	6x36	Apr/Jun	7 oz.
14407-62	tuberculata	292437	Israel	A	MA S	MA D	S	Mar/Jun*	7x60	May/Jul	7 oz.
14408-62	tuberculata	292438	Israel	A	MA D	MA D	S	Feb/Mar*	4x52	Apr/May	5 oz.
14409-62	tuberculata	292439	Israel	A	A P	A D	S	Feb/Mar*	5x44	Apr/Jun	8 oz.
	MELILOTUS										
13939-62	alba	290380	Hungary	B	MA E	MA D		June	Died before seed matured.		
13940-62	alba	290381	Hungary	B		Died without bloom.					
13941-62	alba	290382	Hungary	B	MA E	MA D		June	30x26	Jul/Aug	166 gm.
13949-62	alba	290390	Hungary	B	MA S	MA D		Died without bloom			
13946-62	altissimus	290387	Hungary	B	MA S	MA D		Died without bloom			
14552-62	altissimus	292799	Sweden	B	MA S	MA D		Aug	9x16	Did not set seed	
14505-62	indicus	292613	Israel	A	F E	F D	S	Jun/Aug	12x5	July	6 gm.
13809-62	officinalis	289313	Hungary	B	MA E	MA D		June	18x19	Did not set seed	
13810-62	officinalis	289314	Hungary	B	F E	F D		Jun/Jul	12x14	Aug	2 gm.
13811-62	officinalis	289315	Hungary	B	MA E	MA D		May/Jun	30x20	July	224 gm.
13947-62	officinalis	290388	Hungary	B	MA E	MA D		Jun/Aug	39x60	Jul/Aug	159 gm.
12869-61	wolgica	283663	Czecho.	B	MA S	MA D		June	3x8	Did not set seed	
13951-62	wolgica	290392	Hungary	B	MA E	A D		Jun/Jul	30x40	July	310 gm.
13906-62	sp.	289668	Spain	A?		Died over winter					

LEGEND FOR LEGUME AND OTHER PLANTINGS

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LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic; Cleis.-Cleistogamous
BLOOM DATE: *-Greenhouse
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SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1965 Plantings - Legume and Other - Beltsville, Md.

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	ONONIS										
14412-62	alopecuroides	292442	Israel	A	MA S	F D	S	Apr/May*	13x24	May/Jun	19 gm.
14414-62	natrix	292444	Israel	W T P	F E	MA D	C	Apr/Sept*	8x6	May/Sept	1 gm.
	ORNITHOPUS										
13988-62	sativus	290725	England	A	A S	A D	S	Mar/May*	20x60	May/Jun	97 gm.
	PHASEOLUS										
4935-48	lathyroides	---	P.Rico	A	F E	F D	S	Feb/May*	48x18	Feb/Jun	43 gm.
	PSORALEA										
12000-60	sp.	275616	S.Afr.		MA E	A D	Died without bloom		9x11		
	SANGUISORBA										
13735-62	minor	287926	Spain	H P	MA P	MA D		May/Jun	11x18	Jul/Aug	64 gm.
	SCORPIURUS										
14435-62	muricata	292466	Israel	A	F S	F D	S	Mar/May*	5x15	Apr/Jun	Trace
	SESBANIA										
4935-48	emerus	-	P.Rico	W P	F E	F D	C?	Oct/Jan*	96/60	Dec/Jan	-
	TRIFOLIUM										
14438-62	campestre	292469	Israel	C A	A S	A D	S?	Mar/May*	9x27	June	5 gm.
12969-61	cherleri	284001	Cyprus	C A	A P	F D	S	Feb/Mar*	3x16	Apr	33 gm.
12974-61	cherleri	284016	Morocco	C A	MA P	A D	S	Mar/May*	2x12	June	25 gm.
12975-61	cherleri	284017	Israel	C A	MA P	F D	S	Feb/May*	3x19	Apr/Jun	55 gm.
12981-61	cherleri	284023	Portugal	C A	A P	A D	S	Apr/May*	2x20	June	19 gm.
12982-61	cherleri	284024	Italy	C A	A P	A D	S	Apr/Jun*	2x32	June	1 gm.
15239-63	cherleri	297981	Portugal	C A	A P	A D	S	Apr/May*	2x24	June	54 gm.
15240-63	cherleri	297982	France	C A	MA P	A D	S	Apr/May*	4x16	June	32 gm.
14441-62	clypeatum	292472	Israel	C A	MA S	A D	S	Mar/May*	12x41	May	44 gm.
12967-61	echinatum v. carmeli	284009	Israel	C A	A S	MA D	C	Mar/May*	10x43	June	trace
12968-61	echinatum v. carmeli	284010	Israel	C A	A S	MA D	C	Mar/May*	16x40	June	1 gm.
6442-52	filiforme	186968	Portugal	C A	MA P	A D	S	Apr/May*	3x32	June	5 gm.
13210-61	fragiferum	284259	Algeria	H P	F P *	MA D		Jun/Aug	2x18	Jul/Nov	7 gm.
13211-61	fragiferum	284260	Morocco	H P	F P *	MA D		Jun/Sept	2x24	Jul/Nov	10 gm.
13212-61	fragiferum	284261	Morocco	H P	F P *	A D		Jun/Sept	2x18	Jul/Nov	25 gm.
13213-61	fragiferum	284262	Morocco	H P	F P *	A D		Jun/Aug	2x24	Jul/Nov	27 gm.
13214-61	fragiferum	284263	Morocco	H P	A P *	A D		Jun/Aug	2x18	Jul/Sept	27 gm.
13215-61	fragiferum	285264	Morocco	H P	A P *	A D		Jun/Sept	3x40	Jul/Sept	43 gm

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	TRIFOLIUM										
13216-61	fragiferum	284265	Morocco	H P	F P *	A D		Jun/Sept	4x22	Jul/Nov	48 gm.
13217-61	fragiferum	284266	Morocco	H P	F P *	A D		Jun/Sept	3x22	Jul/Nov	35 gm.
13218-61	fragiferum	284267	France	H P	MA P *	A D		Jun/Sept	3x32	Jul/Sept	12 gm.
13992-62	fragiferum	290729	England	H P	F P *	A D		Jun/Sept	5x22	Jul/Nov	65 gm.
5401-44	glomeratum	168637	Australia	C A	F P	MA D	S	Apr/May*	3x27	June	38 gm.
9294-58	glomeratum	263246	Turkey	C A	F P	MA D	S	Apr/May*	3x20	June	33 gm.
14529-62	medium	241117	N.Zeal.	H P	F S 1/	MA D		Jun/Sept	6x12	Jul/Nov	Trace
14733-63	medium	G-13238	Vermont	C H P	A E 1/	A D		June	11x18	did not set	seed
15251-63	nigrescens	297993	Portugal	C A	MA P	MA D	C	May/Jul	4x14	Jun/Jul	3 gm.
15252-63	nigrescens	297994	Algeria	C A	A P	MA D	C	May/Jul	2x16	Jun/Jul	3 gm.
15253-63	nigrescens	297995	Algeria	C A	F P	F D	C	May/Jul	2x12	June	trace
15254-63	nigrescens	297996	France	C A	MA P	MA D	C	May/Jun	3x10	July	trace
14445-62	palaestinum	292476	Israel	A	F S	F D	S	Mar/Apr*	10x30	May	40 gm.
14446-62	palaestinum	292477	Israel	A	F S	MA D	S	Mar/Apr*	7x24	Apr/May	38 gm.
14447-62	palaestinum	292478	Israel	A	F S	F D	S	Mar/Apr*	9x22	May	44 gm.
14449-62	pilulare	292480	Israel	A	F P	MA D	S	Feb/Mar*	3x22	Mar/Apr	34 gm.
13903-62	pratense	289665	Spain	H P	MA S	MA D	C	June	12x36	July	35 gm.
14001-62	pratense	290738	Engl. winterkill		MA P	MA D	C	Jun/Aug	3x9	Jul/Aug	3 gm.
14451-62	purpureum	292482	Israel	A	MA S	A D	C	Mar/May*	19x45	July	trace
14452-62	purpureum	292483	Israel	A	A S	A D	C	Mar/May*	21x42	July	trace
14453-62	purpureum	292484	Israel	A	MA S	MA D	C	Mar/May*	17x37	June	-
13239-61	resupinatum	284288	Italy	A	F S	F D	S	May/Jul*	15x48	July	9 gm.
13240-61	resupinatum	284289	Italy	A	F S	A D	S	May/Jul*	12x60	July	25 gm.
13241-61	resupinatum	284290	Italy	A	F S	MA D	S	May/Jul*	18x48	Aug.	31 gm.
13242-61	resupinatum	284291	Italy	A	F S	F D	S	May/Jul*	7x72	July	30 gm.
14513-62	spumosum	292621	Israel	A	MA S P	F D	S	Feb/May*	7x35	May	98 gm.
7494-50	stellatum	198099	Morocco	A	MA S	MA D	S	Apr/May*	9x33	May/Jun	10 gm.
7845-51+56	stellatum	200412	Jerusalem	A	F S	F D	S	Feb/Mar*	8x26	Mar/May	72 gm.
14514-62	stellatum	292622	Israel	A	A S	A D	S	Mar/May*	6x32	Apr/May	16 gm.
7314-50	tembense	196895	Ethiopia	A	F P	F D	S	Feb/Mar*	4x34	Mar/Apr.	58 gm.
14515-62	tomentosum	292623	Israel	A	A S	A D	S	Mar/May*	3x26	May/Jun	24 gm.
15445-63	tomentosum	287962	Spain	A	A S	A D	S	Jun/July	4x14	July	13 gm.
13249-61	usambarense	284298	Taiwan	A	A S	A D	S	Feb/May*	8x40	Mar/May	35 gm.
	TRIGONELLA										
9973-57	corniculata	220123	Afghan.	A	MA S	F D	S	Mar/Jun*	12x60	May/Jun	14 gm.

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	VICIA										
13636-62	amoena	286489	Japan	W H P	F S 1/	A D		Sept	12x26	Blasted	
14741-62	angustifolia	294277	Israel	A	MA S	MA D		May	10x3	June	8 gm.
14742-62	angustifolia	294278	Israel	A	MA S	MA D		May/Jun	6x4	Jun/Jul	31 gm
14743-62	angustifolia	294279	Israel	A	MA S	MA D		May/Jun	4x9	Jun/Jul	25 gm.
14744-62	angustifolia	294280	Israel	A	MA S	A D		May	8x10	May/Jun	49 gm.
14745-62	angustifolia	294281	Israel	A	F S	MA D		May/Jun	9x6	June	8 gm.
14746-62	angustifolia	294282	Israel	A	MA S	MA D		May/Jun	6x4	Jun/Jul	20 gm.
14747-62	angustifolia	294283	Israel	A	MA S	MA D		May	6x13	May/Jun	30 gm.
14748-62	angustifolia	294284	Israel	A	MA P	MA D		May/Jun	4x18	June	33 gm.
14749-62	angustifolia	294285	Israel	A	F S	MA D		May	6x8	June	8 gm.
14750-62	angustifolia	294286	Israel	A	F S	MA D		May/Jun	6x4	Jun/Jul	11 gm.
13590-62	dumetorum	286212	Czecho.	H P	MA P	MA D		Jun/Jul*	4x76	Jul/Aug	49 gm.
14752-62	narbonensis	294296	Israel	A	F E	MA D		May	9x5	June	trace
14753-62	narbonensis	294297	Israel	A	F S	MA D		May/Jun	10x12	June	13 gm.
14754-62	narbonensis	294298	Israel	A	MA S	MA D		May	6x7	May/Jun	29 gm.
14755-62	narbonensis	294299	Israel	A	F E	MA D		May	7x6	June	9 gm.
14756-62	narbonensis	294300	Israel	A	F S	MA D		May/Jun	6x8	Jun/Jul	6 gm.
14757-62	narbonensis	294301	Israel	A	F S	MA D		May	6x8	June	13 gm.
14758-62	narbonensis	294302	Israel	A	F S	MA D		May	12x7	June	15 gm.
14759-62	narbonensis	294303	Israel	A	F S	F D		May	10x12	June	trace
13592-62	pisiformis	286214	Czecho.	W H P	MA S 1/	A D		Jun/Aug	22x24	Jul/Sept	51 gm.
14763-63	sativa PRESTA	294642	France	A	MA S	MA D		June	12x4	Jun/Jul	3 gm.
14764-63	sativa SYLPHIE	294643	France	A	F S	MA D		June	6x12	July	trace
14765-63	sativa TARDA	294644	France	A	MA S	MA D		June	6x10	July	trace
14766-63	sativa NIDIA	294645	France	A	F S	A D		Jun/Jul	7x12	July	4 gm.
13594-62	tenuifolia	286216	Czecho.	H P	MA S 1/	A D		May/Jun	10x28	Blasted	
	VIGNA										
14012-62	sinensis	291139	Australia	A	MA P	A D		Sept	20x72	Sept/Oct	19 gm.
14013-62	sinensis	291140	Australia	A	F P	A D		Jul/Aug	16x50	Aug/Sept	23 oz.
14014-62	sinensis	291141	Australia	A	F S	A D		Sept	30x72	frost	-
14015-62	sinensis	291142	Australia	A	F P	A D			18x72	-	-
14016-62	sinensis	291143	Australia	A	F P	A D		Sept	18x72	frost	-

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	ANTHYLLIS										
13984-62	vulneraria	290709	England	W H P	F E	A B&C	C	Jun/Aug	4x10	did not set seed	
	ARGYROLOBIUM										
11893-60	abyssinicum	273864	Ethiopia	T P	MA S&P	MA D	S	Jan/Jun*	6x22	Mar/Jun*	1 gm
	ASTRAGALUS										
15041-63	cicer	297335	Norway	C H P	A S&P 1/	A D		Jun/Jul	17x54	Jun/Aug	28 gm
15042-63	falcatus	297336	Norway	C H P	A S&P 1/	MA D		May/Jun	20x30	June	150 gm
15043-63	glycophyllus	297337	Norway	C H P	A S 1/	A D		June	13x44	July	5 oz
	CORONILLA										
15876-64	varia	'KY-63'	Comml.	C H P	A S&P 1/	A D		Jun/Jul	30x48	Jul/Aug	20 gm
	DESMODIUM										
10481-58	polycarpum	257712	Austral	W T P	MA E&S	MA D	C	Nov/Feb*	48x72	Jan/Mar*	trace
	GALACTIA										
6700-49	acapulcensis	188883	Cent. Am.	W T P	MA P	MA D	S?	Dec/Apr*	8x72	Apr/Jul*	77 gm
	HEDYSARUM										
12649-61	coronarium	283346	Italy	T P	-	F B		-	7x15	-	-
7899-51+ 59	procumbens	-	Spain	T P	F P	MA D		Jun/Jul	6x18	July	
	LATHYRUS										
16337-64	annuus	308015	Czecho	A	MA P	MA D	S	April*	26"staked - not collected		
16338-64	aphaca	308016	Czecho	A	A S&P	A D	S	Mar/May*	8x18	May/Jun*	14 gm
16339-64	articulatus	308017	Czecho	A	F P	F D	S	May/Aug*	52x20	Jun/Aug*	40 gm
16340-64	cicera	308018	Czecho	A	MA S	F D	S	May*	7x18	June*	30 gm
16341-64	clymenum	308019	Czecho	A	MA P	A D	S	Mar/May*	72"staked	May/Jun*	9 oz.
16343-64	hirsutus	308021	Czecho	A	F P	F D	S	May/Aug*	36x30	Jun/Aug*	68 gm
16344-64	inconspicuus	308022	Czecho	A	MA S	A D	S	Apr/May*	7x16	May/Jun*	40 gm
16347-64	nissolia	308025	Czecho	A	MA E&S	MA D	S	Mar/Apr*	12x16	Apr/Jun*	45 gm
16348-64	ochrus	308026	Czecho	A	F S&P	MA D	S	Apr/May*	60"staked	May/Jul*	54 gm
17136-66	ochrus	-	Czecho	A	F S&P	MA D	S	May/Jun*	60"staked	Jun/Jul*	24 gm
14549-62	sphaericus	292796	Sweden	A	F S	F D	S	Apr/Jun*	6x20	Jun/Jul*	28 gm
16351-64	sphaericus	308029	Czecho	A	MA S	MA D	S	May/Jun	8x14	Jun/Jul	52 gm
16353-64	tingitanus	308031	Czecho	A	MA S&P	MA D	S	May/Jun*	72"staked	June*	152 gm
14181-61	*sp. (rec'd as Vicia sp.)	200058	Iran	A	A S	MA D	S	Apr/May*	7/18	Jun*	6 gm

*Identification pending

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	LESPEDEZA										
14895-63	bicolor	Del.Sel.	Str.#1	W H P	M E	A D		Sept	48x26	Oct	21 gm
13628-62	" f.acutifolia	286477	Japan	W H P	M E	A D		Aug/Sept	44x36	Oct	15 gm
4666-49+51	cuneata	-	Florida	W H P	M E&S	MA D		Sept	30x30	Oct	135 gm
6448-49	japonica	-	BN sel	W H P	M E	MA D		Aug/Sept	60x30	Oct	96 gm
2230-50	maximowiczi	-	Arn.Arb	W H P	M E	A D		Aug/Sept	44x30	Oct	95 gm
15539-64	repens	-	Md.	W H P	A P	MA D		Sept/Oct	6x28	Oct	6 oz
4920-47	robusta	-	Va.	W H P	M E	A D		Sept	37x30	Oct	19 gm
7146-50	serpens	193950	Japan	W H P	MA S&P	MA D		Oct	6x18	Nov	7 gm
15034-64	serpens	297385	Japan	W H P	MA S&P	MA D		Oct	6x30	Nov	trace
14906-64	striata	296574	Austral	W A	A P	A D		-	3x13	-	-
	LOTUS										
16355-64	conimbricensis	308033	Czecho	W A	F P	MA D	S	May*	1x16	June*	14 gm
14762-63	corniculatus	NY-3789	N.Y.	C H P	A S	A D	C	May/Aug	10x42	Jun/Aug	28 gm
14503-62	cytisoides	292611	Israel	W T P	F S	F D		Jun/Sept	-	did not set seed	
16358-64	hispidus	308036	Czecho	W A	MA P	MA D		Jun/Sept	2x12	July	10 gm
16360-64	ornithopodioides	308038	Czecho	W A	MA S	F D		Jun/Aug	7x18	Jul/Aug	45 gm
16931-65	ornithopodioides	310413	USSR	W A	F S	F D		Jun/Aug	10x12	Jul/Aug	40 gm
16361-64	parviflorus	308039	Czecho	W A?	MA S	MA D	C	May/Jun	6x30	Died	
	MEDICAGO										
16379-64	gerardi*	308057	Czecho	W A	F P	A D		Mar/Apr*	4x24	did not set seed	
16380-64	intertexta*	308058	Czecho	W A	F P	MA D	S	Mar/May*	4x48	May/Jul*	44 gm bur
13806-62	lupulina	289310	Hungary	W A	F S	A B	S	Mar/May*	8x30	Apr/Jul*	80 gm bur
16383-64	noeana	308061	Czecho	W A	MA P	MA D	S	Mar/Apr*	5x44	Apr/May*	112 gm "
12848-61	orbicularis	283641	Lebanon	W A	F P	MA D	S	Mar/Apr*	1x46	May/Jun*	95 gm bur
12849-61	orbicularis	283642	Lebanon	W A	A P	A D	S	Mar/Apr*	2x34	May/Jun*	132 gm "
12850-61	orbicularis	283643	Italy	W A	MA P	MA D	S	Apr/May*	2x27	June*	64 gm CS
12851-61	orbicularis	283644	Italy	W A	A S	A D	S	Mar/May*	8x42	May/Jun*	90 gm bur
12852-61	orbicularis	283645	Morocco	W A	MA P	A D	S	Feb/Apr*	3x48	May/Jun*	135 gm "
12853-61	orbicularis	283646	Morocco	W A	F P	A D	S	Mar/Apr*	5x34	May/Jun*	90 gm "
12854-61	orbicularis	283647	Israel	W A	A P	A D	S	Feb/Mar*	2x40	Apr/May*	92 gm "
16376-61	orbicularis	308054	Czecho	W A	MA P	A D	S	Mar/May*	2x42	June*	150 gm CS

*Identification pending.

LEGEND FOR LEGUME AND OTHER PLANTINGS

HABIT: C-Cool; W-Warm; H-Hardy; T-Tender; P-Perennial; A-Annual; B-Biennial
STEMS: *-Stoloniferous; A-Abundant; MA-Moderately Abundant; F-Few; E-Erect; S-Sub-erect; P-Prostrate
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic; Cleis.-Cleistogamous
BLOOM DATE: *-Greenhouse
MATURE SIZE: Height x Spread (inches)
SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1966 Plantings - Legume and Other - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	MEDICAGO										
5016-47	polymorpha	163369	Ecuador	W A	F P	MA D	S	Feb/Apr*	5x42	May*	65 gm burr
14393-62	" v. vulgaris	292423	Israel	W A	MA S	A D	S	Feb/Mar*	9x84	Apr/May*	160 gm "
14394-62	" v. vulgaris	292424	Israel	W A	MA D	MA D	S	Feb/Mar*	6x44	May*	85 gm " + 11 gm CS
14395-62	" v. vulgaris	292425	Israel	W A	MA S	F D	S	Feb/Mar*	12x56	May*	145 gm burrs
14396-62	" v. vulgaris	292426	Israel	W A	F S	MA D	S	Feb/Mar*	9x56	May*	60 gm "
14397-62	" v. vulgaris	292427	Israel	W A	MA S	MA D	S	Feb/Apr*	10x60	May*	165 gm "
14398-62	" v. vulgaris	292428	Israel	W A	F S	MA D	S	Feb/Apr*	9x48	May*	140 gm "
14399-62	" v. vulgaris	292429	Israel	W A	MA S	MA D	S	Feb/Apr*	10x54	May*	100 gm "
6332-49	" v. vulgaris f. tuberculata	136329	Uruguay	W A	MA P	A D	S	Mar*	6x48	May*	5 oz "
7431-50	" v. vulgaris f. tuberculara	197858	Argentina	W A	F P	F D	S	Mar/Apr*	5x42	May*	20 gm CS
16377-64	rigidula	308055	Czecho	W A	MA P	MA D	S	Mar/Apr*	10x42	May*	135 gm
16384-64	tornata	308062	Czecho	W A	MA P	MA D	S	Mar/Apr*	9x70	Apr/June*	125 gm burrs
7558-50	truncatula v. tribuloides	198661	Australia	W A	MA P	MA D	S	Feb/Apr*	2x32	Apr/June*	180 gm "
6438-50	tuberculata	186964	Uruguay	W A	MA S	MA D	S	Mar/Apr*	10x44	May*	122 gm "
6140-50	turbinata laevis	184753	Portugal	W A	MA P	A D	S	Feb/Apr*	2x38	June*	143 gm
	MELILOTUS										
5877=48	alba annua	181438	Uruguay	W A	F E	F D		Jun/Sept	24x20	Jul/Oct	140 gm
16388-64	alba annua	308066	Czecho	W A	F E	F D		Jun/Sept	24x16	Jul/Oct	90 gm
16389-64	elegans	308067	Czecho	W A	F E	F D		June	12x8	June	4 gm
13948-62	infesta	290389	Hungary	W A	F E	MA D	M	Mar/May*	24x16	May*	trace
	ONONIS										
6336-49	viscosa	186333	Cyprus	A	F E	F D	S	Mar/Jun*	14x12	Apr/Jun*	2 gm
	SANGUISORBA										
11506-60	minor	269396	Afghan	C H P	MA S	F B		May/Jun	10x30	June	57 gm
15208-63	minor	297950	Canada	C H P	F E	F B		June	5x7	June	trace
15209-63	minor	297951	Greece	C H P	A E	A B C		May/Jun	16x18	Jun/Jul	7½ oz
15210-63	minor	297952	Argentina	C H P	A E	A B C		May/Jun	15x13	Jun/Jul	132 gm
15211-63	minor	297953	France	C H P	MA P	MA B C		May/Jun	9x38	Jun/Jul	43 gm
15212-63	minor	297954	France	C H P	MA E	MA B		May/Jun	15x34	Jun/Jul	134 gm

LEGEND FOR LEGUME AND OTHER PLANTINGS

HABIT: C-Cool; W-Warm; H-Hardy; T-Tender; P-Perennial; A-Annual; B-Biennial
STEMS: *-Stoloniferous; A-Abundant; MA-Moderately Abundant; F-Few; E-Erect; S-Sub-erect; P-Prostrate
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic; Cleis.-Cleistogamous
BLOOM DATE: *-Greenhouse
MATURE SIZE: Height x Spread (inches)
SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1966 Plantings - Legume and Other - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	SANGUISORBA										
15213-63	minor	297955	Spain	C H P	A E	A B C		May/Jun	12x16	Jun/Jul	9 oz
15215-63	polygama	297957	Italy	C H P	MA E	MA B C		May/Jun	9x12	Jun/Jul	11 oz
15218-63	sp.*	297960	Spain	C H P	F E	A B C		May/Jun	12x18	Jun/Jul	12 gm
15219-63	sp.*	297961	Porgugal	C H P	F E	F B C		June	12x19	July	trace
	TETRAGONOLOBUS										
16392-64	palaestinus	308070	Czecho	C A	F S	F D		May	10x28	Died	
16393-64	purpureus	308071	Czecho	C A	F S	MA D		May/Jun	7x26	June	trace
16394-64	requienii	308072	Czecho	C A	MA D	A D		Jun/Aug*	4x30	Jul/Aug*	trace
	TRIFOLIUM										
15237-63	ambiguum	297979	USSR	C H P	F S 1/	MA D		June	3x12	Jun/Jul	1 gm
15238-63	ambiguum	297980	USSR	C H P	MA E 1/	MA D		May/Jun	7x15	Jun/Jul	trace
16143-64	burchellianum	300147	S.Afr	W T P	MA S&P *	MA D	C	Feb/Aug*	6x23	Jun/Sept	11 gm
12976-61	cherleri	284018	France	C A	A S	A D	S	May*	3x14	July*	14 gm
12977-61	cherleri	284019	France	C A	A S	MA D	S?	Apr/May*	4x15	Jun*	-1 gm
12978-61	cherleri	284020	Spain	C A MA S		A D	S?	Apr/May*	5x24	Jun*	3 gm
12979-61	cherleri	284021	Spain	C A	A S	F D	S	Apr/May*	5x24	Jun*	17 gm
12980-61	cherleri	284022	Israel	C A	A S	MA D	S	Feb/Apr*	7x30	Jun*	trace
12983-61	cherleri	284025	Italy	C A	MA S	MA D	S?	Apr/May*	6x19	Jun*	-1 gm
16401-62	clypeatum	308079	Czecho	C A	MA E	MA D	S?	Feb/Apr*	12x24	May*	trace
16414-64	dubium	308092	Czecho	C A	MA S	A D	S	Apr/Jun*	6x36	June*	12 gm
13224-61	hybridum	284273	China	C H P	MA S	MA D		Jun/Aug	12x28	Jul/Sept	30 gm
13225-61	hybridum	284274	Turkey	C H P	F E&S	F B		Jun/Aug	2x6	Jul/Sept	6 gm
13226-61	hybridum	284275	Turkey	C H P	F E	MA B C		Jun/Aug	8x18	Jul/Sept	8 gm
13228-61	hybridum	284277	Turkey	C H P	MA S	MA D		Jun/Aug	6x24	Jul/Oct	30 gm
13229-61	hybridum	284278	Iran	C H P	MA S	MA D		Jun	10x22	July	24 gm
13230-61	hybridum	284279	Turkey	C H P	MA S	MA D		Jun/Jul	9x18	July	10 gm
13231-61	hybridum	284280	Turkey	C H P	MA S	MA D		Jun/Aug	9x22	Jul/Sept	24 gm
13993-62	hybridum 4X	290730	England	C H P	F S	A B C		Jun/Aug	8x24	Jul/Sept	3 gm
13994-62	hybridum 2X	290731	England	C H P	MA S	MA D		Jun/Jul	12x26	July	5 gm
16403-64	hybridum	308081	Czecho	C H P	A S	A B C		Jun/Aug	12x21	Jul/Sept	trace
16405-64	leucanthum v. obscurum	308083	Czecho	C A	F S	A D	Died				
13493-61	maritimum	284855	Australia	C A	F P	MA D		Mar*	Died		

*Identification pending.

LEGEND FOR LEGUME AND OTHER PLANTINGS

HABIT: C-Cool; W-Warm; H-Hardy; T-Tender; P-Perennial; A-Annual; B-Biennial
STEMS: *-Stoloniferous; A-Abundant; MA-Moderately Abundant; F-Few; E-Erect; S-Sub-erect; P-Prostrate
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline; D-Distributed
POLLINATION: S-Self; C-Cross; A-Apomictic; Cleis.-Cleistogamous
BLOOM DATE: *-Greenhouse
MATURE SIZE: Height x Spread (inches)
SEED COLLECTION: *-Greenhouse Collection
RHIZOMATOUS: 1/

1966 Plantings - Legume and Other - Beltsville, Md

BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
	TRIFOLIUM										
14530-62	medium	284621	N.Zeal.	C H P	A E	A D		Jun/Jul	11x24	Jul/Aug	1 gm
15087-63	medium	297381	Norway	C H P	MA S 1/	A D		Jun/Jul	6x24	Jul/Sept	1 gm
15246-63	megalanthum	297988	Chile	C T P	A P *	A D	C	Mar/Apr*	5x13	did not set seed	
16406-64	ochroleucon	308084	Czecho	W T P	F E&S	A B	C?	Jun/Aug	3x8	Jul/Aug	trace
13236-61	pallidum	284285	Algeria	C A	MA S	A D	C?	Apr/May*	Died		
14580-62	sariosense	292827	Hungary	C H P	A E 1/	A D	C	Jun/Jul	9x30	Jul/Aug	1 gm
16411-64	spumosum	308089	Czecho	C A	MA S	A D		Mar/Apr*	8x26	May*	no fill
13244-61	striatum	284293	Portu	C A	MA S&P	MA D	S	June*	5x12	Jun/Jul*	7 gm
16413-64	tridentatum	308091	Czecho	C A	MA P	A D	S	Apr/Jun*	4x20	June*	5 gm

LEGEND FOR PHALARIS AQUATICA PLANTINGS

STEMS: A-Abundant; MA-Moderately Abundant; F-Few; E-Erect; S-Sub-erect
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline
SPRING AND FALL RECOVERY: E-Early; L-Late; A-Abundant; MA-Moderately Abundant; S-Sparse
MATURE SIZE: Head height-Leaf heightxSpread

1966 Plantings - *Phalaris aquatica*
Beltsville, Md.

BN No.	PI No.	ORIGIN	STEMS	LEAVES	SPRING RECOVERY	MATURE SIZE	FALL RECOVERY	AMT. OF SEED
13157-61	284206	Portugal	A E 1/	MA B C	E A	46-25x18	L MA	132 gm
15532-64	302473	Greece	MA E 1/	MA B C	L MA	26-14x15	L S	66 gm
The following accessions were received as stolons collected in 1964 by R. M. Love, Department of Agronomy, University of California, Davis.								
15624-64	306732	Greece	MA E 1/	MA B C	E MA	28-15x16	L MA	trace
15625-64	306733	Greece	A E 1/	MA B C	E MA	29-17x17	L MA	2 gm
15626-64	306734	Greece	F E 1/	F B C	E MA	29-17x15	L MA	2 gm
15627-64	306735	Greece	MA E 1/	MA B C	E MA	34-19x19	L MA	8 gm
15628-64	306736	Greece	MA E 1/	MA B C	E MA	28-19x18	L S	trace
15629-64	306737	Greece	A E 1/	A B C	E MA	35-24x21	L A	trace
15630-64	306738	Greece	A E 1/	A B C	E MA	25-19x22	L MA	20 gm
15631-64	306739	Greece	A E 1/	A B C	E MA	36-29x20	L A	5 gm
15632-64	306740	Greece	A E 1/	A B C	E A	26-20x20	L A	3 gm
15633-64	306741	Greece	F E 1/	MA B	E S	25-15x18	L S	trace
15634-64	306742	Greece	MA E 1/	A B C	E A	26-18x21	L S	2 gm
15635-64	306743	Greece	A E 1/	A B C	E MA	25-19x20	L MA	10 gm
15636-64	306744	Greece	A E	MA B C	E MA	20-14x16	L MA	6 gm
15637-64	306745	Greece	MA E 1/	MA B C	E A	20-12x16	L A	22 gm
15638-64	306747	Greece	A E 1/	A B C	E A	27-15x19	L A	12 gm
15639-64	306748	Greece	MA E 1/	MA B C	E A	30-19x12	L A	10 gm
15640-64	306749	Greece	A E 1/	A B C	E MA	32-25x14	L A	16 gm
15641-64	306750	Greece	A E 1/	MA B C	E MA	28-18x16	L A	28 gm
15642-64	306751	Greece	F E 1/	MA B C	E A	36-16x17	L MA	trace
15643-64	306752	Greece	A E 1/	A B C	E A	29-21x26	L A	34 gm
15644-64	306753	Greece	MA E 1/	A B C	E MA	35-24x14	L S	7 gm
15645-64	306754	Greece	A E 1/	A B C	E MA	43-30x19	L MA	2 gm
15646-64	306755	Greece	A E 1/	A B C	E A	41-26x23	L A	5 gm
15647-64	306756	Greece	A E 1/	MA B C	E A	43-32x17	L A	38 gm
15648-64	306757	Greece	A E 1/	A B C	E A	45-30x18	L MA	17 gm
15649-64	306759	Israel	A E	MA B C	E MA	36-20x16	L S	3 gm
15650-64	306760	Greece	A E	MA B C	E MA	40-23x14	L S	23 gm

LEGEND FOR PHALARIS AQUATICA PLANTINGS

STEMS: A-Abundant; MA-Moderately Abundant; F-Few; E-Erect; S-Sub-erect
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; C-Cauline
SPRING AND FALL RECOVERY: E-Early; L-Late; A-Abundant; MA-Moderately Abundant; S-Sparse
MATURE SIZE: Head height-Leaf height x Spread

1966 Plantings - *Phalaris aquatica*
Beltsville, Md.

BN No.	PI No.	ORIGIN	STEMS	LEAVES	SPRING RECOVERY	MATURE SIZE	FALL RECOVERY	AMT. OF SEED
15651-64	306761	Israel	MA E	MA B C	E MA	39-22x18	L MA	13 gm
15652-64	306762	Israel	MA E	MA B C	E MA	36-20x12	L S	12 gm
15653-64	306763	Israel	MA E	MA B C	E MA	39-27x14	L S	5 gm
15654-64	306764	Israel	MA E	MA B C	E MA	35-17x17	L S	10 gm
15655-64	306766	Israel	MA E	MA B C	E A	46-27x19	L S	5 gm
15656-64	306767	Israel	MA E	A B C	E A	45-28x16	L S	9 gm
15657-64	306765	Israel	MA E	F B C	E M A	36-21x16	L S	2 gm
15658-64	306768	Israel	A E 1/	MA B C	E MA	36-20x17	L S	10 gm
15659-64	306769	Israel	MA E 1/	MA B C	E MA	33-18x14	L S	2 gm
15660-64	306770	Israel	A E 1/	MA B C	E S	36-18x16	L S	trace
15661-64	306771	Israel	F E	F B C	L S	24-10x7	L S	trace
15662-64	306772	Israel	F E	F B C	L S	27-11x7	L S	4 gm
15663-64	306773	Israel	F E 1/	MA B C	E MA	31-15x13	L MA	14 gm
15664-64	306774	Israel	F E 1/	F B C	E S	30-16x11	L MA	8 gm
15665-64	306775	Israel	F E 1/	A B C	E S	40-30x15	L MA	2 gm
15666-64	306776	Israel	MA E	MA B C	E S	40-29x15	L MA	3 gm
15667-64	306777	Israel	F E	MA B C	E MA	40-30x14	L MA	4 gm
15668-64	306778	Israel	MA E	F B C	E MA	46-25x15	L MA	4 gm
15669-64	306779	Israel	F E	MA B	E MA	46-20x17	L S	4 gm
15670-64	306780	Israel	F E	MA B C	E A	60-24x15	L A	9 gm
15671-64	306781	Israel	MA E	F B C	E S	40-19x11	L S	2 gm
15673-64	306746	Greece	A E	A B C	E MA	36-27x16	L MA	6 gm

SPECIAL REPORTS - LEGUMES

Lupinus spp.

Forty accessions of Lupinus were planted, two in November of 1965, and 38 about February 1, 1966. Most of these represented small seed samples received from botanic gardens, and seed was needed for distribution.

Seed was planted in 6-in. clay pots, and transplants put into gallon cans, 3 plants per can. The number of plants per accession varied from two to twelve. Notes were taken on leafiness, disease resistance and uniformity of ripening.

As soon as danger of frost had passed in the spring, the plants were moved to the coldframes. Many had already started to bloom in the greenhouse, but about half bloomed only in the coldframes. PI-308042 and 308052 were hand cross-pollinated deliberately, as they did not appear to be setting seed. Three accessions were grown in the field.

We had disease problems. Uniformity of ripening was good in most species. Seven accessions were quite leafy and many produced about an ounce of seed. Shattering was not evaluated. Several of the introductions are in process of being reidentified.

Trifolium fragiferum

Ten accessions were reported in 1965 and 30 in 1966. Of the 1965 accessions, PI-284264 was the best performer, having abundant early spring recovery, abundant forage production, very good spread and seed production (not all the seed was collected). Rabbits ate it all summer, but did not hurt it. There was no disease or center die-back, and it wasn't affected by drought. PI-290729 was an excellent seed producer, but did not spread as rapidly as 284264.

The chart gives seed production for the first year only of the 30 accessions reported in 1966. Seed production should increase in succeeding years. Some die-back was noted in the center of the row on some accessions - probably because of our severe winters.

1966 accessions with good seed production or good spread were PI-206919, 254916, 250789, 297984, and 284854. Spring and fall recovery, plant spread and seed production are indicated in the chart.

Vicia spp.

Forty-seven accessions of Vicia were grown in 1966, most of them received from botanic gardens. Most were grown in the greenhouse and staked, so only total height can be given. Greenhouse seed production helped us to get seed that was not damaged by the vetch Bruchid. Seed production is from 7 to 8 plants of each species.

We again had trouble some some disease in V. narbonensis, leaf spot and defoliation. PI-308113 looked good until just before the bloom period, then disease got it.

If you find a species you would like to plant - we will be glad to share our seed.

LEGEND FOR LUPINUS PLANTINGS

UNIFORMITY OF RIPENING: Good = 2 wks. or less; Fair = 3-4 wks.; Poor - 5 wks. or more
POLLINATION: C-Cross; S-Self
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; D-Distributed
DISEASE: S-Slight; M-Moderate; H-Heavy
BLOOM DATE: *-Greenhouse
MATURE SIZE: Flower height-Height x Spread
SEED COLLECTION: *-Greenhouse Collection

Special Report - Lupinus spp. - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	UNIFORMITY OF RIPENING	POLLIN	LEAVES	DISEASE	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
16364-64	albifrons v. douglasii*	308042	Czecho	Poor	C	F D	S	Feb/Apr*	35-23x26	Mar/May*	56 gm
16362-64	albo-coccineus	308040	Czecho	Poor	S	A D	None	Apr/May*	22-16x11	May/June	41 gm
13786-62	albus	289158	Hungary	Good	C&S	F D	H	Mar/May*	20-20x12	May/June	18 gm
13787-62	albus	289159	Hungary	Fair	C&S	F D	H	Mar/Apr*	21-21x10	May/June	5 gm
13788-62	albus	289160	Hungary	Fair	S	MA D	M	Mar/May	18-18x14	May/June	28 gm
13789-62	albus	289161	Hungary	Good	S	MA D	M	Apr/May*	18-14x12	Jun/July	20 gm
3696-44	angustifolius	150165	Australia	-	-	MA D		June	36-36x5	Did not set seed	
12842-61	angustifolius	283635	Bulgaria	Good	S	MA D	-	May	24-24x12	June	13 gm
12845-61	angustifolius*	283638	Czecho	Fair	S	MA D	-	Apr/May*	36-36x15	Jun/Jul	9 gm
13790-62	angustifolius	289162	Hungary	Fair	S	MA D	-	May	36-36x7	Jun/Jul	24 gm
13791-62	angustifolius	289163	Hungary	Good	S	MA D	-	May/Jun	33-33x10	June	17 gm
13792-62	angustifolius	289164	Hungary	Good	S	MA D	S	May	37-37x7	June	18 gm
14380-62	angustifolius	292410	Israel	Fair	S	F D	-	May	16-16x10	June	9 gm
16363-64	aridus	308041	Czecho	Poor	S	F D	None	Mar/May*	34-26x14	May/June	22 gm
16365-64	elegans*	308043	Czecho	Fair	S	MA D	S	Apr/May*	24-15x16	May/June	19 gm
13793-62	hartwegii	289165	Hungary	Poor		A D		May/June	24-24x12	Jun/Aug	7 gm
16366-64	hartwegii*	308044	Czecho	Good	S	F D	-	Apr/May*	30-30x12	June	5 gm
16367-64	hilarianus	308045	Czecho	Good	S	MA D	-	Apr/May*	28-18x11	May/June	12 gm
16368-64	insignis	308046	Czecho	Fair	S	F D	-	Apr/May*	16-16x15	June	2 gm
16369-64	linifolius (?)	308047	Czecho	Good	S	F D	-	Apr/May*	20-20x6	June	10 gm
6768-49	luteus	189160	Holland	Good	S	F D	S	June	20-20x11	July	6 gm
13795-62	luteus	289167	Hungary	Good	S	MA D	S	May	18-18x10	June	21 gm
13796-62	luteus	289168	Hungary	Good	S	MA D	None	Apr/May*	15-15x11	June	40 gm
13797-62	luteus	289169	Hungary	Good	S	MA D	H	May	12-12x7	June	1 gm
13798-62	luteus	289170	Hungary	Good	S	A D	-	May	16-16x13	June	28 gm
13799-62	luteus	289171	Hungary	Good	S	A D	-	Apr/May*	16-16x13	June	47 gm
13800-62	luteus	289172	Hungary	Good	S	F D	M	May	12-12x9	June	2 gm
13801-62	luteus	289173	Hungary	Good	S	MA D	M	May	19-19x13	June	15 gm
13802-62	luteus	289174	Hungary	Good	S	MA D	-	Apr/May*	20-20x14	June	30 gm
14382-62	luteus	292412	Israel		Died of disease						
16371-64	micranthus	308049	Czecho	Fair	S	MA D	-	Apr/May*	35-25x12	May/June	22 gm
13803-62	mutabilis	289175	Hungary	Poor	S	MA D	-	Apr/May*	36-26x14	May/July	11 gm
16372-64	mutabilis	308050	Czecho	Fair	S	MA D	-	Apr/May*	13-13x10	June	4 gm

* Identification Pending.

LEGEND FOR LUPINUS PLANTINGS

Uniformity of Ripening: Good = 2 wks. or less; Fair = 3-4 wks.; Poor = 5 wks. or more
POLLINATION: C-Cross; S-Self
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; B-Basal; D-Distributed
DISEASE: S-Slight; M-Moderate; H-Heavy
BLOOM DATE: *-Greenhouse
MATURE SIZE: Flower height-Height x Spread
SEED COLLECTION: *-Greenhouse Collection

Special Report - Lupinus spp. - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	UNIFORMITY OF RIPENING	POLLIN	LEAVES	DISEASE	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
16373-64	nanus	308051	Czecho	Poor	S	A D	none	Apr/Jun*	16-9x10	May/Jun	13 gm
16374-64	ornatus*	308052	Czecho	Poor	C	F D	none	Feb/May*	28-20x24	Mar/Jun*	57 gm
14383-62	palaestinus	292413	Israel	Good	C&S	A D	none	Apr/May*	12-12x12	June	30 gm
5252-47	pilosus	166960	Australia	Fair	S	F D	S	June	24-24x6	Jun/July	trace
16375-64	pilosus	308053	Czecho	Fair	S	A D	-	Apr/May*	18-18x13	Jun/July	50 gm
13804-62	polyphyllus	289176	Hungary	-	C	MA B	-	July	24-12x10	Did not set seed	
13805-62	varius	289177	Hungary	Poor	S	MA D	-	Apr/May*	20-20x12	Jun/July	19 gm

*Identification pending.

LEGEND FOR TRIFOLIUM FRAGIFERUM PLANTINGS

STEMS: A-Abundant; MA-Moderately Abundant; F-Few; P-Prostrate
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; D-Distributed
SPRING AND FALL RECOVERY: E-Early; L-Late; A-Abundant; MA-Moderately Abundant; S-Sparse

Special Report - Trifolium fragiferum - Beltsville, Md.

BN No.	PI No.	ORIGIN	STEMS	LEAVES	SPRING RECOVERY	FALL RECOVERY	SPREAD OF SOD FIRST YEAR	SPREAD OF SOD SECOND YEAR	SEED COLL. 1965
4349-46	-	Ore. via N.Y.	F P	F D	L S	L S	6"	Dead	trace
5026-47	-	N.Mex. PMC	F P	F D	L S	L S	10"	12"	6 gm
6035-49	183873	S. Afr.	MA P	MA D	E MA	L A	12"	18"	13 gm
6167-49	184959	Tasmania	F D	F D	E MA	L MA	11"	20"	trace
7620-53	198968	Cyprus	MA P	MA D	E A	L A	16"	28"	11 gm
7956-53	246749	Spain	MA P	F D	E MA	L MA	11"	18"	4 gm
7957-59+60	246750	Spain	MA P	MA D	E A	L MA	17"	24"	6 gm
9362-60	204509	Turkey	MA P	MA D	L S	L M	9"	20"	14 gm
9363-60	204511	Turkey	MA P	MA D	L MA	L S	10"	28"	10 gm
9364-60	204515	Turkey	MA P	MA D	L S	L S	11"	21"	13 gm
9365-59	206919	Turkey	MA P	MA D	L S	L MA	14"	24"	14 gm
9366-58	227255-B	Iran	F P	MA D	L S	L S	4"	7"	trace
9367-60	229546	Iran	A P	A D	L S	L S	10"	19"	5 gm
9368-60	231041	Turkey	MA P	MA D	L S	L S	11"	21"	14 gm
9369-59+60	231043	Afghan.	A P	A D	L S	L MA	9"	23"	8 gm
13492-61	284854	Australia	A P	A D	E S	L MA	16"	30"	17 gm
15085-63	297379	Norway	MA P	A D	L S	L S	10"	14"	-
15241-63	297983	Italy	A P	A D	E S	L MA	12"	24"	11 gm
15242-63	297984	France	A P	A D	L A	L MA	17"	30"	9 gm
15243-63	297985	Tunisia	F P	A D	L S	L S	9"	16"	5 gm
15244-63	297986	Israel	MA P	A D	E S	L MA	14"	17"	9 gm
15413-48	172475	Turkey	MA P	MA D	L S	L MA	11"	21"	9 gm
15419-63	223821	Afghan.	MA P	MA D	E A	L A	15"	22"	15 gm
15422-55	231086	NE-9 sel.	F P	F D	L S	L S	5"	13"	2 gm
15425-63	239962	Morocco	MA P	MA D	E S	L MA	7"	18"	15 gm
15426-63	239963	Portugal	A P	A D	E A	L A	20"	35"	8 gm
15430-63	250789	Afghan.	MA P	MA D	E A	L MA	16"	30"	19 gm
15440-63	254916	Iraq	MA P	MA D	E MA	L MA	11"	28"	23 gm
15442-63	260983	Iran	MA P	MA D	E MA	L MA	11"	31"	44 gm
15444-63	275986	France	MA P	A D	L S	L S	12"	28"	2 gm

LEGEND FOR *VICIA* PLANTINGS

STEMS: A-Abundant; MA-Moderately Abundant; F-Few; S-Sub-erect
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; D-Distributed
UNIFORMITY OF RIPENING: G-Good (2wks.or less); F-Fair (3-4 wks.); P-Poor (5 wks. or more)
BLOOM DATE: *-Greenhouse
MATURE SIZE: Height x Spread, except where staked
SEED COLLECTION: *-Greenhouse Collection

Special Report - Vicia spp. - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	STEMS	LEAVES	UNIFORMITY OF RIPENING	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
13923-62	angustifolia	289685	Spain	MA S	MA D	P	Apr/Jun*	60" staked	May/Jun*	112 gm
16417-64	angustifolia	308095	Czecho	MA S	MA D	P	Mar/Apr*	72" staked	Apr/Jun*	168 gm
16418-64	benghalensis	308096	Czecho	F S	MA D	G	Apr/May*	72" staked	June*	62 gm
16420-64	bithynica (?)	308098	Czecho	F S	F D	G	June	3x16	July	trace
16422-64	dasycarpa	308100	Czecho	A S	MA D	G	Mar/May*	72" staked	June*	124 gm
16424-64	eriocarpa	308102	Czecho	MA S	MA D	P	Apr/May*	40" staked	Jun/Jul*	6 gm
16426-64	hirsuta	308104	Czecho	MA S	MA D	P	Apr/May*	44" staked	May/Jun*	51 gm
16427-64	hybrida	308105	Czecho	MA S	MA D	G	Mar/Apr*	21x36 staked	May*	72 gm
13919-62	lutea	289681	Spain	A P	A D	P	Apr/May*	3x25	Jun/Jul*	60 gm
13924-62	lutea	289686	Spain	MA S	A D	F	Apr/May*	60" staked	June*	112 gm
16428-64	lutea	308106	Czecho	MA S	MA D	G	Apr/May*	60" staked	June*	88 gm
16446-64	lutea	308124	Czecho	MA S	MA D	G	April*	50" staked	May*	5 gm
16430-64	" v. violescens	308108	Czecho	F S	MA D	F	Mar/Apr*	48" staked	May/Jun*	106 gm
16431-64	michauxii	308109	Czecho	MA S	MA D	F	Mar/May*	44" staked	May*	85 gm
16419-64	monantha	308097	Czecho	F S	F D	P	Mar/Apr*	36" staked	Apr/Jun*	45 gm
16432-64	monantha*	308110	Czecho	F S	F D	F	May/Jun	6x8"	Jun/Jul	10 gm
13840-62	narbonensis	289485	Hungary	F S	F D	P	Mar/May*	44" staked	Apr/Jun*	19 gm
14751-62	narbonensis*	294295	Israel	F S	F D	F	Apr/May*	4x14"	May/Jun*	1 gm
14753-62	narbonensis	294297	Israel	F S	MA D	P	Mar/May*	10x48"	Apr/Jun*	39 gm
14758-62	narbonensis	294320	Israel	F S	F D	F	Mar/Apr*	16x50"	Apr/May*	24 gm
14759-62	narbonensis	294303	Israel	F S	F D	G	Mar/Apr*	10x36"	April*	3 gm
16435-64	" v. serratifolia	308113	Czecho	MA S	A D	G	Apr/May*	16x36"	May*	trace
16437-64	pannonica*	308115	Czecho	MA S	A D	F	May/Jun*	66" staked	Jun/Jul	5 gm
13921-62	peregrina	289683	Spain	MA S	MA D	G	Apr/May*	36" staked	June*	87 gm
13922-62	peregrina	289684	Spain	MA S	A D	F	Apr/May*	56" staked	Jun/Jul*	85 gm
13925-62	peregrina	289687	Spain	A S	A D	F	Apr/May*	72" staked	Jun/Jul*	35 gm
16438-64	peregrina	308116	Czecho	MA S	MA D	F	Apr/May*	34" staked	May/June*	83 gm
13423-61	sativa	284472	Czecho	A S	A D	F	May/Jun*	78" staked	June*	253 gm
13857-62	sativa	289500	Hungary	A S	MA D	G	May*	72" staked	June*	87 gm
13858-62	sativa	289501	Hungary	A S	MA D	G	May*	96" staked	June*	233 gm
13876-62	sativa	289519	Hungary	MA S	MA D	G	Apr*	66" staked	May	112 gm

* Identification pending

LEGEND FOR VICIA PLANTINGS

STEMS: A-Abundant; MA-Moderately Abundant; F-Few; S-Sub-erect
LEAVES: A-Abundant; MA-Moderately Abundant; F-Few; D-Distributed
UNIFORMITY OF RIPENING: G-Good (2 wks. or less); F-Fair (3-4 wks.); P-Poor (5 wks. or more)
BLOOM DATE: *-Greenhouse
MATURE SIZE: Height x Spread, except where staked
SEED COLLECTION: *-Greenhouse Collection

Special Report - Vicia spp. - Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	STEMS	LEAVES	UNIFORMITY OF RIPENING	BLOOM DATE	MATURE SIZE	SEED COLL. DATE	AMT. OF SEED
13920-62	sativa	289682	Spain	MA S	MA D	F	May*	54" staked	June*	7 gm
14004-62	sativa	290741	England	MA S	MA D	G	Mar/Apr*	60" staked	May*	154 gm
16415-64	sativa	308093	Czecho	MA S	MA D	G	Apr/May*	84" staked	May*	279 gm
16433-64	sativa	308111	Czecho	MA S	MA D	F	Apr*	66" staked	Apr/May	115 gm
16434-64	sativa	308112	Czecho	MA S	MA D	G	Apr*	68" staked	May*	98 gm
16440-64	sativa	308118	Czecho	A S	MA D	G	May*	78" staked	June*	196 gm
16449-64	sativa	308127	Czecho	MA S	MA D	F	May*	72" staked	June*	264 gm
16448-64	" v. albiflora	308126	Czecho	MA S	MA D	G	Apr*	54" staked	May*	158 gm
16442-64	sicula*	308120	Czecho	MA S	MA D	F	May/Jun*	72" staked	Jun/Jul*	110 gm
13593-62	sylvatica	286215	Czecho	A S	A D	-	Oct*	4x24"	Dec*	trace
16232-64	sylvatica	307598	Sweden	Died without bloom in field						
16443-64	sylvatica	308121	Czecho	Died without bloom in field						
16444-64	tetrasperma	308122	Czecho	MA S	A D	F	Mar*	6x24	Apr*	27 gm
14175-61	villosa	250796	Afghan.	MA S	A D	G	Apr/May*	72" staked	May/Jun*	120 gm
16445-64	villosa	308123	Czecho	A S	A D	F	Jun/Jul*	48" staked	July*	trace
7497-50	sp.*	198102	Morocco	F S	F D	F	Apr*	90" staked	May*	143 gm

*Identification pending.

REIDENTIFICATIONS

Following is a list of reidentifications made on the basis of herbariums submitted to the New Crops Research Branch, ARS, during 1965.

PI No.	BN No.	Original Identification	Reidentification
108938	1324	Onobrychis sp.	Onobrychis viciaefolia Scop.
120119B	9467	Trifolium scabrum	Trifolium spumosum L.
120170	9509	Trifolium xerocephalum	Trifolium hirtum All.
134244	9585	Trifolium hirtum	Trifolium cherleri L.
181993	5983	Lupinus sp.	Lupinus luteus L.
190308	6857	Digitaria sp.	D. milanjiana (Rendle) Stapf
193742	7139	Trifolium sp.	Trifolium tembense Fres.
196895	7314	Trifolium subrotundum	Trifolium tembense Fres.
200220	7792	Digitaria sp.	Digitaria mombasana C.E.Hubb.
213472	10131	Digitaria sp.	D. milanjiana (Rendle) Stapf
226647	12232	Medicago polymorpha v.vulgaris	Medicago littoralis Rhode ex Lois.Delong
238339	8781	Melilotus neapolitana	Melilotus indica (L.) All.
240152	15288	Bromus sp.	Bromus ramosus Huds.
244328	7946	Trigonella sp.	Trigonella polycerata L.
246751	7959	Trifolium hybridum	Trifolium repens L.
250961	15685	Deschampsia sp.	Deschampsia caespitosa (L.) Beauv.
*250962	15686	Deschampsia sp.	Deschampsia caespitosa (L.) Beauv.
251114	15687	Deschampsia sp.	Deschampsia caespitosa (L.) Beauv.
251115	15688	Deschampsia sp.	Deschampsia caespitosa (L.) Beauv.
253200	14731	Trifolium medium	T. echinatum Willd. ex char.
258402	10604	Trifolium echinatum	T. echinatum v. carmeli (Boiss.) Bib.& Belli.
260245	15000	Lolium perenne	Festuca arundinacea Schreb.
269853	11420	Lotus sp.	Lotus ornithopodioides L.
270390	11561	Tephrosia noctiflora	Tephrosia incana Grah.
270393	11564	Tephrosia villosa	Tephrosia vestita Vog.
284010	12968	Trifolium carmeli	T.echinatum v. carmeli (Boiss.)Bib.& Belli
284544	13463	Digitaria sp.	D. milanjiana (Rendle) Stapf
284840	13489	Poa araratica	Poa cf. nemoralis L.
286211	13589	Poa trivialis	Poa pratensis L.
287962	15445	Trifolium fragiferum	Trifolium tomentosum L.
289646	13884	Alopecurus sp.	Alopecurus pratensis L.
289648	13886	Astragalus sp.	Astragalus hamosus L.
289652	13890	Festuca sp.	Festuca ovina L.
289653	13891	Festuca sp.	Festuca rubra L.
289655	13893	Festuca sp.	Bromus erectus Huds.
289656	13894	Festuca sp. - blue plants	Festuca rubra L.
289656	13894	Festuca sp. - green plants	Festuca ovina L. - Now PI-312225, BN-17090
289658	13896	Koeleria sp.	Koeleria caudata (Link) Steud.
289659	13897	Koeleria sp.	Koeleria vallesiana (Honck.)Bertol.
289660	13898	Medicago sp.	Trifolium squarrosum L.
289661	13899	Medicago sp.	Medicago sativa L.
289662	13900	Medicago sp.	Medicago sativa L.
289663	13901	Medicago sp.	Medicago tribuloides Desr.
289664	13902	Medicago sp.	Medicago tribuloides Desr.
289665	13903	Medicago sp.	Trifolium pratense L.
289666	13904	Medicago sp.	Medicago tribuloides Desr.
*251001	10386	Trifolium sp.	Trifolium globosum L.

REIDENTIFICATIONS

PI No.	BN No.	Original Identification	Reidentification
292505	14474	Trifolium sp.	T. israeliticum Zoh. & Katzn.
292600	14492	Eragrostis bipinnata	E. cilianensis (All.) Lutati
295700	14832	Eragrostis lehmanniana	E. curvula (Schrad.) Nees
295703	14835	Eragrostis sarmentosa	E. curvula (Schrad.) Nees
295707	14839	Eragrostis sp.	E. curvula (Schrad.) Nees
297878	15137	Anthyllis rubicunda	Anthyllis tetraphylla L.
306726	15618	Anthoxanthum sp.	Anthoxanthum odoratum L.
306727	15619	Anthoxanthum sp.	Anthoxanthum odoratum L.
306730	15622	Dactylis glomerata	D. glomerata ssp. hispanica (Roth)Nym.
306746	15673	Phalaris sp.	Phalaris aquatica L.

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The following nomenclature changes have recently been authorized by taxonomists of the New Crops Research Branch, ARS. These changes are applicable to all introductions received previous to this date.

New Name	Old Name
Cenchrus ciliaris L.	Pennisetum ciliare (L.) Link
Leucaena leucocephala (Lam.) deWit.	Leucaena glauca (L.) Benth.

Most of the following nomenclature changes will be especially applicable to "The Inventory of Selected Warm Season Grass Genera" prepared by Dr. A. J. Oakes.

Preferred Names	Synonyms
Andropogon condensatus HBK.	Andropogon microstachyus Desv. ex Hamilt.
Bothriochloa alta (Hitchc.) Henr.	Andropogon altus Hitchc.
Bothriochloa barbinodis (Lag.) Herter	Andropogon barbinodis Lag.
Bothriochloa exaristata (Nash) Henr.	Andropogon exaristatus (Nash) Hitchc.
Bothriochloa perforata (Trin. ex Fourn.) Herter	Andropogon barbinodis var. perforatus (Trin. ex Fourn.) Gould = Andropogon perforatus Trin. ex Fourn.
Bothriochloa saccaroides (Sw.) Rydb.	Andropogon saccharoides Sw.
Bothriochloa springfieldii (Gould) Parodi	Andropogon springfieldii Gould
Bothriochloa wrightii (Hack.) Henr.	Andropogon wrightii Hack.

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National Plant Materials Center
Domestic Distribution of Seed
1965 & 1966

Genera	Number of Packets Distributed to:							
	Northeast		Midwest		Southeast		West	
	'65	'66	'65	'66	'65	'66	'65	'66
Acacia					3		3	3
Aeluropus								2
Aeschynomene					3		1	
Agropyron		18	24	1		10	24	125
Agrostis		4	13	10				10
Alopecurus	1	23	28	24			4	19
Amorpha		2						1
Ampelodesmos						1		4
Anagyris							1	
Andropogon	8	26		11		8	3	
Anthephora								1
Anthyllis						1	1	8
Apluda							1	
Arachis							4	
Argyrolobium					2			
Aristida					1	2	3	3
Arrhenatherum		17	1	9			2	15
Arundinella						2		2
Astragalus		2	20	1			5	28
Astrebla						1	1	1
Atriplex							1	3
Axonopus						13		
Bothriochloa	26	24			4	11		2
Brachiaria						3		12
Brachypodium						3	2	25
Briza							3	
Bromus	2	25	5	5	18	1	23	63
Cajanus							1	
Calopogonium					1			
Canavalia					2	2		
Carex					2			8
Cassia					2		1	
Casuarina					1		1	2
Catabrosa				1				2
Catalpa					2		2	
Cedreia					1		1	
Cenchrus					20	28	13	19
Centrosema						10		5
Chenopodium							1	
Chloris					2	29		10
Chrysopogon					2	2	1	
Clitoria						1		
Colutea							1	
Coronilla	7	28	11		2	2	5	

National Plant Materials Center
Domestic Distribution of Seed
1965 & 1966

Genera	Number of Packets Distributed to:							
	Northeast		Midwest		Southeast		West	
	'65	'66	'65	'66	'65	'66	'65	'66
Cotyledon							1	
Corylus		1						
Crotalaria					2		2	
Cunninghamia					1		1	
Cymbopogon					2	1	1	
Cytisus		8						
Dactylis		33		24			1	48
Deschampsia			14					
Desmodium					1	1	24	
Desmostachya		1				2		2
Dichanthium						9		1
Digitaria						1		3
Dolichos						4		2
Dorycnium					1			
Dorycnopsis							1	
Echinochloa					2		1	16
Ehrharta								1
Elaeagnus		1		2				
Eleusine			1		2		2	
Elymus		25	3			1	2	23
Elyonurus						2	2	
Elytrigia							1	
Eragrostis		5			52	42	36	12
Erianthus		1						
Erodium								2
Eysenhardtia					1			
Festuca	27	58	111	12	2	6	28	68
Galactia						1		1
Galenia								1
Gillenia	1					2		
Glycine					37		3	2
Glycyrrhiza								1
Hedysarum							1	7
Hippocrepis							5	
Holcus								1
Hordeum						1	3	28
Hymenocarpus							6	
Hyparrhenia							1	
Indigofera					9	1	28	
Ischaemum					1			
Kennedya								1
Kochia						2		
Koeleria								2
Lasiacis					2			
Lathyrus		8	2		2	9	3	12

National Plant Materials Center
Domestic Distribution of Seed
1965 & 1966

Genera	Number of Packets Distributed to:							
	Northeast		Midwest		Southeast		West	
	'65	'66	'65	'66	'65	'66	'65	'66
Leptochloa						1		1
Lespedeza		9			3	2		
Leucaena						1	1	
Listia							2	
Lolium	47	48		8	1	51	2	15
Lotus		60	25	7	11	3	67	36
Lupinus		2			6	46	2	
Medicago	1	8	1	1	6	4	22	58
Melica								1
Melilotus						1	13	10
Miscanthus		1						
Myrica					1		1	
Onobrychis							1	22
Ononis							10	1
Ornithopus							16	12
Oryzopsis					1		12	
Osteospermum							1	
Panicum		39	18	2	6	115	2	167
Pappophorum							3	59
Paspalum		3	3		87	258	16	3
Pennisetum					1	6		
Phalaris	3	13	17	29		44	42	77
Phaseolus					7	5	2	1
Phleum	1	12	3	2			5	2
Pittosporum					1			
Poa	8	29	12	19	2	2	13	67
Polygonum							2	
Psoralea					1		1	
Puccinellia		1						2
Roegneria								8
Rosa								1
Rhynchosia							1	
Sacciolepis						1		
Sanguisorba		15	27			3		13
Schinus					1			
Sesbania					2		7	
Sesleria								2
Setaria					64	14		21
Sorghastrum		23		1		1		
Sorghum					3			
Spinifex								1
Sporobolus					1	9	1	
Stenotaphrum					1			
Stipa		1			3	9		5

National Plant Materials Center
Domestic Distribution of Seed
1965 & 1966

Genera	Number of Packets Distributed to:							
	Northeast		Midwest		Southeast		West	
	'65	'66	'65	'66	'65	'66	'65	'66
Stizolobium					1	1		
Stylosanthes					7	2	2	
Teramnus							1	
Tetrachne							2	1
Tetragonolobus							1	
Themeda					16	1	3	
Trachypogon						1		
Tricholaena						2		1
Trifolium	1	5	6	6	32	11	26	34
Tristania					1		1	
Vetiveria					1			
Vicia		5	1		100	41	33	40
Vigna					3		1	
Zornia							2	
Unidentified							1	
TOTAL	133	584	346	175	554	852	584	1268
TOTAL - 1965 & 1966	717		521		1406		1852	

TOTAL GENERA - 148

TOTAL PACKETS - 1965.....1617
1966.....2879

GRAND TOTAL.....4496

National Plant Materials Center
Domestic Distribution of Vegetative Material
July 1, 1965 - December 30, 1966

BN No.	Species		Type and Amount of Material
11046	Ajuga reptans		15-20 plants
9026	Ammophila breviligulata		10,740 culms
9026	" "	Sel. D-1	100 culms
9026	" "	Sel. D-2	100 culms
9026	" "	Sel. D-3	100 culms
9026	" "	Sel. D-4	100 culms
9026	" "	Sel. D-5	100 culms
9026	" "	Sel. D-6	100 culms
9026	" "	Sel. D-7	100 culms
9026	" "	Sel. D-8	100 culms
9026	" "	Sel. D-9	100 culms
9026	" "	Sel. J-1	100 culms
9026	" "	Sel. J-2	100 culms
9026	" "	Sel. J-4	100 culms
8998	" "		100 culms
11367	" "		100 culms
14684	" "		100 culms
14685	" "		100 culms
14777	" "		100 culms
9871	Carex kobomugi		100 plts.
11537	Carex kobomugi - PI-270402		100 plts.
8299	Castanea mollissima		20 plts.
15674	Castanea mollissima - ex-BN-8299		120 plts.
--	Cornus florida		30 plts.
12114	Cornus mas		25 plts.
14627	Cornus officinalis		10 plts.
4158	Cynodon dactylon 'Tufcote' bermudagrass		2 sq. yds + 2 flats
11654	Cynodon dactylon - PI-271557		runners
16042	Dactyloctenium australe - PI-299588		stolons
10481	Desmodium polycarpum - PI-257712		15 plts.
6699	Desmodium triflorum - PI-188882		1 flat
11699	Desmodium sp.		5 cuttings
12888	Desmodium sp.		5 cuttings
8009	Erianthus ravennae		600 plants
12896	Helianthemum nummularium		12-20 rooted cuttings
12898	Helianthemum rhodanthum		12-20 rooted cuttings
12899	Helianthemum sp.		12-20 rooted cuttings
12357	Herniaria glabra		15-20 plants
12900	Hypericum calycinum		15-20 plants
12901	Hypericum moserianum		12-20 cuttings
10782	Iberis sempervirens		12-20 cuttings
10762	Liriope graminifolia		500 plants
11069	Liriope sp. 'Wonder Evergreen'		500 plants
10999	Nepeta mussini		15-20 plants
13500	Pachistima canbyi		25 rooted cuttings

National Plant Materials Center
Domestic Distribution of Vegetative Material
July 1, 1965 - December 30, 1966

BN No.	Species	Type and Amount of Material
8360	Panicum amarulum	600 + 2 flats
8553	Panicum amarum	1600 + 2 flats
10581	Panicum amarum	1000
15887 through 15892	Pennisetum purpureum - PI-304188 through PI-304193	5 root pieces each
-	Poa pratensis - Merion bluegrass	1 sq. yd.
-	Poa pratensis - common bluegrass	1 sq. yd.
8656	Pyracantha coccinea - PI-203240	35 plants
17163	Rhamnus alaternus - PI-241910	5 plants
12313	Robinia pseudoacacia	4 rooted cuttings
12363	" "	25 " "
12364	" "	16 " "
13555	" "	27 " "
13556	" "	15 " "
12911	Santolina chamaecyparissus	12-20 cuttings
12912	Santolina virens	12-20 cuttings
15080	Sedum ellacombianum	12-20 cuttings
12913	Sedum rupestre v. fosterianum	12-20 cuttings
12914	Sedum sexangulare	15-20 plants
10885	Sedum spurium coccineum	15-20 plants
10886	Thymus serpyllum	15-20 plants
11048	Thymus lanicaulis	15-20 plants
10888	Veronica incana	15-20 plants
13636	Vicia amoena - PI-286489	rhizomes
6028	Undetermined legume	4 plants

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National Plant Materials Center
Bulk Seed Shipments
1965-1966

BN No.	Species	Amount
8094	Coronilla varia - 'Penngift'	1 lb.
270	Elaeagnus umbellata	50 "
16453	Lathyrus latifolius	1 "
5892	Lespedeza bicolor, Str. 101	1 "
8379	Lespedeza bicolor - 'Natob'	17 "
8569	Lespedeza cuneata - N.C. selection	2 "
9249	Lespedeza cuneata - PI-246769	1 ", 10 oz.
10401	Lespedeza cuneata - Nasu #5	2 "
10849	Lespedeza cuneata - BN selection	1½ "
11400	Lespedeza cuneata - BN selection	3 "
12112	Lespedeza cuneata - N.C. selection	3/4 "
14651	Lespedeza cuneata - Cope-Henson polycross	1½ "
213	Lespedeza daurica shimadai	6 "
9250	Lespedeza X intermixta - PI-246770	2 "
3532	Lespedeza japonica intermedia - BN selection	10 "
8419	Lonicera maackii	10 oz.
8354	Panicum virgatum (Arkansas)	9 lb., 1 oz.
8624	Panicum virgatum (N.Carolina)	7 ", 1 oz.
10864	Panicum virgatum -BN selection	20 " , 1 oz.
14668	Panicum virgatum - 'Pangburn'	2 " , 1 oz.
9195	Panicum virgatum v. cubense (N.Carolina)	9 "
Comm.	Poa compressa	4½ "
3490	Quercus acutissima - PI-78658	66 "
11364	Quercus acutissima - PI-76481	52 "
14638	Quercus acutissima - PI-168939	51 "
15955	Robinia hispida - NY-8018	6 oz.
17904	Spartina patens	1½ lb.

OTHER SHIPMENTS

	Packets 1965	Packets 1966
Foreign Exchange.....	426	624
Interagency and Other.....	230	896

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